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Can we see the bottom?

An impact measurement study on the ten least developed countries in the world (plus Haiti)

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Abstract

In the last 50 years aid has extrapolated its diplomatic objective. The total amount of aid flows disbursed by developed countries has summed lots of billion of dollars. The expectations, were, for a long period of time, not even measured or quantified. The buzz and the media circus created around aid have made African children a trademark used to gather millions. But in the middle of such buzz, the potential effectiveness of these large disbursements was not regarded.

The tremendous flow of money has created regional elites, feeding their bank account from the total lack of responsibility that some aid agencies strongly practice. The track record for failed countries is, still today, incredible high, considered the amount of money and resources disbursed.

How well is aid working in terms of economic growth and human development? What is the current development picture of the poorest of the poorest? The aim of this dissertation is clear: ascertain the impact of the world's social investment, measured through its return in development and growth. How positive is world's current ROSI (return on social investment)? We will therefore, review the main authors on effectiveness of aid and how do they engage with the current efforts in monitoring and control aid.

We will give a special focus on human developing index, as a measure of both poverty and as the main guideline regarding development by crossing net official development assistance (1960-2010) with three different proxies (GDP per capita, Infant mortality rate and School enrolment), representative of each one of HDI's levels (Income, Education and Health). We found no significant impact of the total flow of ODA given to a specific country, and its economic growth or human development.

Subsequently we have disaggregated the aid flow, narrowing its purpose and increasing its explicative power by filtering ODA according to the sector where it was used (ODA used in Production, ODA used in Education and ODA used in Health), and then crossing it again with the three development proxies referred above. None significant correlation was found, although health sector stood out as the sector more susceptible to ODA inflows.

The evidences collected over the resolution of this exercise led to the construction of an operational framework, prepared to analyse and structure aid disbursement based on its potential effectiveness. This framework will operate upon aid's end-to-end flow by analysing all the resources and constrains experienced during the process. The guiding axes will the amount of aid, the context where aid is disbursed, , the conditions and resources behind its disbursement and finally the results achieved within this constrains.

The extremely poor data availability has defined a constrained economic exercise; nonetheless we were able to find no significant relation between the inflow of a specific aid amount and the associated proxy capable of measuring that flow's potential.

Resumo

Nos últimos cinquenta anos, a ajuda extrapolou o seu objectivo diplomático, tendo o valor total entregue por países desenvolvidos atingido valores record. Durante a maior parte destes cinquenta anos, as expectativas associadas a estas transações não foram quantificadas. O circo mediático criado à volta da caridade transformou crianças africanas em marcas registadas, desequilibrou estruturas sociais, criando elites dependentes, alimentadas por agências irresponsáveis. Mas no meio de tanta entropia criada, a efetividade potencial destas doações não foi sequer considerada.

Quão efetiva está a ser a ajuda em promover crescimento económico e desenvolvimento humano? Qual é a situação real do mais pobres, e como é possível encontrar investimentos sociais milionários transformados em disparidades sociais tão flagrantes?

O objectivo desta dissertação é claro: perceber qual é o retorno dos investimentos sociais no dez países mais pobres e menos desenvolvidos.

Vamos analisar os autores mais relevantes sobre efetividade e boas práticas no que toca à cooperação internacional e rever qual é o nível de alinhamento entre o protocolo atual seguido na gestão destes fluxos e as diretrizes teóricas veiculadas pelas agências de controlo. Iremos utilizar o Indicie de desenvolvimento humano como referência para aferir o nível de pobreza dos países analisados e como diretiva principal quanto à definição de desenvolvimento.

Inicialmente pretende-se analisar esta relação através do cruzamento dos fluxos totais de ajuda com a variação temporal de indicadores humanos e económicos. Subsequentemente desagregaram-se os fluxos de acordo com o sector a que foram alocados, aumentando assim o seu poder explicativo.

É importante fazer referência à inadmissível falta de dados significativos, que condicionou o nosso exercício à partida. Não foi encontrada nenhum tipo de relação significativa entre o fluxo de ajuda e o progresso no indicador responsável por medir o nível de desenvolvimento da área específica a que o fluxo foi direcionado.

Acknowledgments

This dissertation was more than a conclusion of a degree…was a culmination of a set of special experiences that led me to picture the world, the people and a society in a more conscious way.

My sincerely thanks to Professor Susana Frazão Pinheiro, who provide me the outstanding opportunity of being part of her personal and so dear project, Safe Haiti and for introducing me to the most relevant subjects in the social perspective of business in such a clear and driven way.

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Thank you Marta for your presence and patience during our Haitian adventure. Despite of the humidity, round the clock roosters, burning garbage, poulet frite avec banana, red zones and stoned buses…we made it.

Thank you to my mentor Luis Veiga Martins, for his time, friendship and experience.

For everyone in Mozambique, for everyone in Guinea-Bissau, for everyone in Haiti, for my exceptional family and for my friends: a truth and sincere thank you.

Motivation

LIGI Safe Haiti Diary, Day 5

"So there I was, on the basement of UN complex building, having a routine meeting when the floor start to tremble. We just stood there, hopping that those 35 seconds ended up soon. After it, we ran. The dust, the cries, the tension…was overwhelming. As bad as the situation was, my thoughts were only on my wife: she had arrived in Port-Au-Prince days before.

As we came to surface, the blur of the shock started to fade away. The image was devastating… it was 16: 53 local time, and the night was falling.

From the tree-building complex, mine was the only one standing. Where 2 hours ago was UN mega complex, with thousands of fellow colleagues, now was a pile of rumble..."

Antonio Perera, UN Sanitation Department

Try to understand what that moment might have been, is, at least, presumptuous. How the screams, cries and pleas would sound, how the face of that city, of that country was changed forever.

Here we were, 19 months after the massive shock, looking over our 4x4 Toyota, trying to find a meaning for such poverty, lack of dignity and a completely absence of hope.

The roads lie side by side to open-air swages, where women sell the midday meal (frequently the only for the day). Large pigs, divide the garbage with chickens, goats and children. Here the air is stained with a heavy grey tone due to extreme traffic pollution and burning garbage. It is a striking scenario that after some setbacks is capable of draining out your energy, your breath, and your will...

This was the Haitian Fact's list that we had to deal with[1]:

- Because of both violence and AIDS, Haiti has the highest percentage of orphans of any country in the Western Hemisphere. Before the 2010 earthquake, the United Nations estimated there were 430,000 orphans.

- In 1803, Jean-Jacques Dessalines (1758-1806), Haiti's first ruler, created the nation's flag by ripping out the white stripe in the French red, white, and blue flag, claiming he would rip white people from the nation.

- Only about 10% of all Haitian children enrolled in elementary school go on to a high school.

- From 1804-1915, more than 70 dictators ruled Haiti.

- Haiti's entire annual budget is $300 million, less than that of many small cities in the United States. Since the 1980s, its economy has shrunk steadily.

- Approximately 1% of Haiti's population owns more than 50% of the nation's wealth.

- Experts claim that it will take decades for Haiti to recover from the January 2010 earthquake. Nearly 75% of the capital will need to be rebuilt, not from zero, but from, as officials declare, "below zero".

Alongside with this "tough" social and political context (that somehow we were expecting), we found a tremendous gap between the potential results of aid and its effectiveness, and the stories about aid "fails" kept on being told to us:

- PNUD has paid to some local workers to clean up some major water corridors. After the work done obviously the payments were suspended. The workers refill again the conducts with garbage to keep receiving money.

[1] Blashfield, Jean F. 2008. Haiti: Enchantment of the World. New York, NY: Scholastic and Inc."The World Factbook: Haiti." Central Intelligence Agency. Accessed: March 20, 2010

- Approximately 1/3 of the total tent refugees actually need it to survive. The remaining number uses it as a way to pressure government to give them houses.

- The major concentration of tents is in Port-Au-Prince main avenues and squares (high visibility). During our month and half in Carrefour (one of the most impacted areas of the earthquake) we rarely saw any tent. It was crystal clear that the concentration of tends depended on the proximity and concentration of International NGO's.

- FAO had an agriculture program in Haiti. By distribution a bag of corn seeds they expect to forest agriculture and harvests. Farmers would take the bag of corn seeds, grind them and make some bread. No crops were seeded.

- Wyclef Jean (known hatian-american singer) made a proposition to Haitian government to collect and manage the entire country's garbage needs. It is said that the refuse was partly because more garbage implies more sick people, and more external money entering the country.

Although those facts lack formal references, they arise from empirical evidences and consensual informal conversations with many Haitian civil actors (professors, international and national NGO's workers, services workers, etc…).

I could not stop myself from wondering how was possible that aid could have such a perverse and nefarious effects. How Haiti's economic and human development is only one more item on international cooperation list, when it should be the primary one? How are NGOs able to create a dependent economic elite which unbalances social scheme, and increase prices indiscriminately? How so many relevant donors do not care how such large-scale aid disbursements are deployed?

Obviously my background in management and my arrogance (inherent to my privilege of living above poverty line, having a proper education and living in a continent capable of enable me to explore a set of opportunities and possibilities) promptly led me to suggest a handful of "simple" organizational and strategic ideas, which seemed so obvious.

Those “so apparent” errors have revealed themselves far more intricate as I understood the dimensions and the level of complexity inherent to such diverse organizations.

Managing a project in Haiti, in Guinea-Bissau and volunteering in Mozambique, clearly allowed me to have a deeper understanding upon development economics. All these experiences gave me valuable insights that will certainly help me to draw a research dissertation aimed to understand the effectiveness of aid and its relation with the human development.

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Acronyms

Central A. R.	Central African Republic
Congo D.R.	Democratic Republic of Congo
DAC	Development Co-operation Directorate
E.U.	European Union
GDP	Gross Domestic Product
GNI	Gross National Income
MOZ	Mozambique
NGO	Non-Governmental Organization
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
OOF	Other Official Flows
UN	The United Nations
UNDP	United Nations Development Programme
UNHCR	The United Nations High Commissioner for Refugees
PPP	Purchase Power Parity

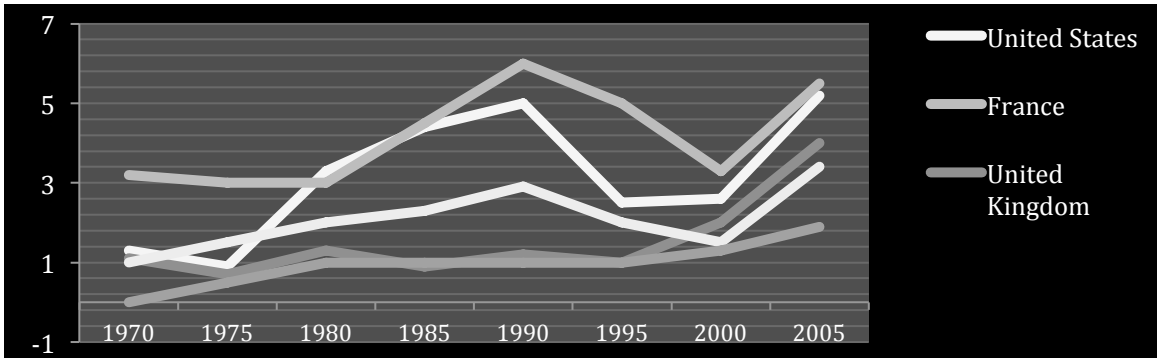
1 Introduction

The simple exercise of *google* Africa, may translate itself as an endless display of volunteering and donation adverts. The thrill that civil society has created around aid, has led to unimaginable flows of money, glorious causes, hit songs, celebrity becoming ambassadors, "one in a life time" paid experiences and incredible CV highlights. We may agree on something: even though the majority of this entire circus is based on well-intended, charitable ideas; the overall result is no more than an empty development concept.

Development cannot be about collecting and donating large amounts of money or about performing efficiently under humanitarian emergences; development has primarily to do with long-term perspectives — it is about erecting the needed infrastructures and contexts, to guarantee a sustained economic growth.

In 1999, the United Nations declared that 70 countries — all of them, aid recipients — were then poorer than they were in 1980. An astonishing number of 43 countries were actually worse off than in 1970. Following this declarations and as a response to President Clinton's plea to the congress to give more money to Africa, critic Dog Bandow mentioned 13 foreign aid failures – Haiti, Somalia, Sierra Leone, Liberia, Angola, Chad, Burundi, Rwanda, Uganda, Zaire, Mozambique, Ethiopia and Sudan – which with the exception of Haiti, were all in sub-Saharan Africa (The Cato Institute, 1999). This declaration refers to a timeframe, where the amount of aid given to Africa by its three main bilateral donors reached it highest value of all time to the date (1970-1990)[2].

Chart 1 - USD billion, 2008 prices and exchange rates, 3-year average net bilateral disbursements



Source: Adapted from World Development Indicators, World Bank, 2011. Set of primary indicators used by World Bank regarding aid effectiveness

[2] From OECD - International Development Statistics - http://www.oecd.org/dataoecd/

Simultaneous to a growth in the amount of aid (aimed to promote development), there was a clear worsening of the economic and human developing of such recipient countries. Why?

We may take Africa, where the ten countries with the lowest human development are located, as the most glaring example. Sub-Saharan Africa has been growing, until 2009, 5% a year during the last decade; and although there is a tenuous optimistic climate, due to slender improvements on life expectancy, health and economic performance, a simple comparison between the bottom countries on human development and a random selected high-income country, highlights clear problems that need to be addressed.

Table 1 – Key Development Indicators Across HDI's Lowest Ranked Countries and High Income Country

Average of the past 12 years – 1999-2010

HDI Lowest Ranked Countries 1980-2011 and randomly chosen high-income country	GNI per capita, PPP	Primary Education completion rate	Mortality rate <5 per 1,000	% of Population with HIV, aged 15-49	Internet users per 100 inhabitants	% of population with access to sanitation Years 2000, 2005, 2008
Burkina Faso	976,7	30,8	184,2	1,7	0,5	10,0
Burundi	348,3	36,6	153,8	4,3	0,6	45,7
Central African Republic	698,3	31,8	168,6	7,2	0,6	28,3
Chad	952,5	29,9	182,2	3,3	0,6	8,3
Congo, Dem. Rep.	257,5	-	178,5	-	0,3	19,7
Guinea	874,2	49,5	153,9	1,5	0,5	17,0
Liberia	298,3	-	137,2	2,4	0,2	15,7
Mozambique	630,8	36,9	159,1	10,4	1,1	15,3
Niger	614,2	29,1	182,4	0,9	0,3	8,3
Sierra Leone	597,5	-	205,4	1,3	0,2	12,0

Randomly chosen high-income country	GNI per capita, PPP	Primary Education completion rate	Mortality rate <5 per 1,000	% of Population with HIV, aged 15-49	Internet users per 100 inhabitants	% of population with access to sanitation Years 2000, 2005, 2008
Sweden	33405,8	99,6	3,6	0,1	74,8	100

Source: Author. Data From World Development Indicators, World Bank, 2011

When carefully analysed, the figures presented on Table 1, referent to global development indicators, draw a tremendous gap between what current society believes

to be a fair context to live and the real context where 1,022,234,000[3] people actually live in. At the same time, data from OECD, claims that the last decade alone, the total amount of development assistant delivered to Africa alone was of 372 015 million USD. How has such flow of assistance done so little, in promoting economic and human developing? How such flow of money still allow 72,9%[4] of Africa's total population, to live under the $2 a day line?

Currently there are diverse schools of thought addressing this issue, and pointing out a various number of causes and another handful number of possible solutions. From Moyo's radical perspective of ending Africa's Aid flow on the next five years, to the new perspectives of betting on long-term capital (clearly more focus on investment rather than on money disbursements), there are a wide range of angles, which have a common axe: strategy and strategy.

"Each country should have a matrix; in one axis they should put what needs to be done in terms of infrastructures, job creation, business climate you need to create to forest investment…

In the other one you should have the donors…and then allocate donors to needs…because if you do not have de dam, does not matter how many agriculture experts you have, we are not going to have production.

President Bush likes to say how many roads and how many schools he has reconstructed… Afghanistan will have 1.3 million graduates an you do not have jobs. These people will either join the insurgency or leave the country. You cannot just build schools, or roads… you have to have an integrated strategy. If you're going to focus in agriculture, we have to make sure you have the irrigation, the roads to take things to market…"

(Economist Graciana del Castillo
Carnegie Council event, June 17, 2010)

Before trying to provide solutions and understand causes, we first need to understand until which extent is aid not fulfilling its role on promoting development. This understanding will certainly help in recognizing if there are any collateral adverse effects coming from aid. As in any social system, the integration of any service/product provider engine, as aid is, may easily promote a subversion of its primary objective: so, is it possible that aid ends up destroying more than building up?

On the other hand, aid effectiveness is now, more than ever, a global concern, addressed by several agencies and initiatives. There is a worldwide consensus on the need to

[3,3] World Bank Development Indicators

monitor aid, and in scrutinize how the potential of improvement, carried out by development assistance, is being reached. Nonetheless the results of such effort fall short on expectations:

"The results are sobering. At the global level, only one out of the 13 targets established for 2010 – coordinated technical co-operation (a measure of the extent to which donors co-ordinate their efforts to support countries' capacity development objectives) – has been met, albeit by a narrow margin. Nonetheless, it is important to note that considerable progress has been made towards many of the remaining 12 targets."

(OECD (2011), Aid Effectiveness 2005-10: Progress in implementing the Paris Declaration, OECD Publishing.)

Easterly and Williamson (2011) paper on aid best practices, gives another point of view over the global objectives on aid effectiveness. The conclusions on the OECD enforcement effort are negative and quite objective: the quality of data and its availability do not meet any transparency standard. Monitoring institutions and aid agencies together with governments and political bodies have to be accountable for the information and the rhetoric values that they convey.

Concluding, all supposedly made "efforts" cannot justify the current reality of a handful of countries, from sub-Saharan Africa to Latin America. There are tremendous flows of assistance, there are specialized, skilled human capital managing those flows, and there is a monitoring program to control its effectiveness. So, what is happening?

The research question of this dissertation arises from a genuine need in explaining several empirical experiences, where the poorest stand, cordially, side by the side, with a resourceful "circus" of international aid effort.

R.Q.1: Is there any relation between the overall inflow of aid and the overall development (human and economic) of the poorest countries?

- R.Q.1.1: To what extent does sectorial directed aid relates with the same sectorial development, of both economic and human progress?

1.1 Methodology

The empirical approach used to address this question, in general terms, will be presented in the following order:

(1) Definition of a 10-country sample, based on lowest ranked HDI countries plus Haiti.

(2) Establish and understanding a possible relation between development and aid by crossing data concerning three key human development indicators (plus a key economic growth indicator) with the total inflow of Official development assistance, for a given country. Based on the Human development index approach (see Appendix A).

(3) Draw a framework, based on the explored literature and on the previous results, for aid effectiveness measurement.

(4) Conducting an interview to a head Director of DFID (Department for international development), confronting the interviewed with the previous results.

1.2 Structure

The structure of this dissertation is disposed as following:

Section 2 addresses the main historical views, the most relevant trends and the diversity of perspectives on foreign aid, aid's effectiveness and best practices.

Section 3 tackles the question proposed, by trying to establish a possible relation between aid and development: we narrow the study to the ten countries with the lowest human development plus Haiti; we then understand the relation between the flows of aid they have been subjected over time and both its economic growth and human development key indicators.

Section 4 discusses the main results obtained and the implications that they might have,. Also proposes a framework analysis based on the obtained results and it also highlights the main limitations of such economic exercise.

Section 5 concludes the research.

2 LITERATURE REVIEW

2.1 Types of Aid

2.1.1 Official Development Assistance

Development Co-operation Directorate (DAC) realized the importance to differentiate between official transactions, which are made with the main objective of promoting the economic and social development of developing countries, and other official flows (OOF) such as military assistance.

In order to accomplish this specific objective of differentiating flows aimed exclusively to promote development, the committee adopted the concept of Official Development Assistance (ODA) in 1969:

Official development assistance is considered as any flow to countries and territories on the DAC List of ODA Recipients[5] and to multilateral development institutions that are provided by official agencies (including state and local governments) or by their executive agencies; and each transaction of which[6]:

a) is administered with the promotion of the economic development and welfare of developing countries as its main objective
b) is concessional in character and conveys a grant element of at least 25 per cent (calculated at a rate of discount of 10 per cent)

DAC-OECD

It is also important to point out that ODA includes developmental and humanitarian aid, the latter being the smallest. Moreover it does not include aid for military use. Regarding economic restructuration, debt forgiveness is counted explicitly as a category of ODA.

2.1.2 Tied Aid

Another relevant issue concerning aid and the development effort highly considered by DAC, is the definition of tying aid - The amount of implicit commitments and obligations carried out by specific types of aid, with both economic and political agendas. Tied aid is

[5] www.oecd.org/dac/stats/daclist
[6] http://www.oecd.org/dataoecd/21/21/34086975.pdf

foreign aid that is required to be spent in the country that as provided the aid (the donor country). It can be explained either by previous Historical relations, trade relationships, geopolitical interests or cultural ties.[7]

As a consequence of the creation of the committee, OECD claims that in 2009, 86% of total ODA provided was untied. (Clay,Geddes and Natali, 2009)

The latest evaluation report[8] on the tied status of aid, conducted by OECD, gives clear indications on a positive evolution on the amount of untied aid – The ability of moving responsibility from donors to recipients by offering local business an opportunity to compete for the more advantageous contracts. Although this encouraging picture, the report concludes that there are still much opportunities to be explored on untying aid. (Clay,Geddes and Natali, 2009)

2.1.3 Other Types of Aid

The DAC committee has been responsible for collecting and making available the most relevant data on the international development effort. The primary sources of information are its own member states.

Besides ODA, the committee keeps monitoring of three other major groups:

- ***Other Official Flows (OOF):*** *transactions by the official sector (not private) that are not "development-motivated". The main items in OOF are export credits, official sector equity and portfolio investment, and debt reorganization.*
- ***Private Flows*** *are basically composed by large transnational corporations investments, private banks, and export credits given by industries. The figures for Private Flows and OOF are quite volatile from year to year because they represent a balance between positive and negative flows.*
- ***Net Private Grants****: Aid from private sources such as NGO's, which accounts for about 15% of the total aid disbursements.*

[7] *www.oecd.org*
[8] Untying Aid: Is it working? An Evaluation of the Implementation of the Paris Declaration and of the 2001 DAC Recommendation of Untying ODA to the LDCs

2.2 Aid Laffer Curve

To even consider that is possible to increase aid's efficiency implies an objective understanding of governments and policies reactions to aid inflows.

Is there such a thing as an Aid Laffer Curve? Is it possible to draw an explanatory model that is able to show whether the positive returns on aid increase with initial inflows and after a certain amount of aid, start to decline, even to a point where the country would be better off with fewer aid?

Governments as any country's decision centre, assume the responsibility of regulating and managing aid accordingly to their ideals and policies. Being an aid recipient country somehow implies deficient governance; poor economic and human development or an emergent humanitarian crisis (which by itself has consequences on institutions, policies and development).

It is possible to trace a series of political, economic, ideological or even cultural motivation that lead governments to underperform, to negligence and jeopardize development. Morss (1984) was able to identify "donor proliferation": an emergent phenomenon that was diverting government officials into "pleasing donors" instead of acting accordingly to their role and to their inherent development responsibility.

On the other hand there is a relationship between aid and investment that can clearly affect aid's positive returns (meaning human and economic development growth): if aid reduces the productivity of investment in a large scale, then aid will reduce growth (Griffin, 1970) mainly because if aid inflows are greater than those which can be properly used in profitable investment, some of the remaining aid needs to be consumed. How? Usually by directing remaining aid to all sorts of consumer subsidies; then when there is a significant reduction in aid, in order to keep subsidies commitments, government needs to borrow, which difficult good economic performances (Lay and Sheffer, 1991)

The destruction of the government's core function becomes an inevitable consequence once all effort is being directed to manage aid itself and not in having overall good governance. The situation is worsened by the addition of aid-financed subsidies obligations, which end up threatening all long-term expectations (Lensik and White, 2000). Therefore it is possible to establish a limit on any receiving country absorptive

capacity; being this absorptive capacity defined by a country's ability to manage the inflow of aid.

2.2.1 Turning Point

By considering the existence of an Aid Laffer Curve it becomes crucial to define a value, which draws the line that defines how much is too much.

World bank report "Assessing Aid" (1998) states that good governance influence the effectiveness of aid and that above a certain value the inflows of aid starts to have negative effects.

There is no clear evidence that good governance is positively correlated with returns on aid inflows, but there are indications that return on aid inflows starts to be negative when aid exceeds 50% of the GNP (Lensink and White,1999). Nonetheless there are other contemporaries' studies claiming that the turning point is around 25%(Hadjimichael et al, 1995) and 51%(Durbarry et al, 1998).

The other corroborative study (although using different methods to estimate the turning point – does not use a quadratic term of aid, uses GDP and PPP values for GDP) suggest 18,5% (assuming that PPP values for GDP are 5 times the normal value of GDP) of the GDP. (Collier and Dollar,2001).

2.3 Aid Efficiency

Efficiency defines the degree of success of a specific task or purpose based on a good use of time and effort. It evaluates the capability of a specific combination of time and effort to produce an effective outcome with a minimum amount of expenditure or unnecessary effort.

On the other side, aid is about structuring and deploying a set of resources (human and financial) from a specific donor to a recipient in order to achieve specific development goals[9]. Therefore Aid Efficiency, is the extend to which international cooperation inflows are able to satisfy donors primary objectives based on the following obligations:

[9] (1) Eradicate extreme poverty and hunger, (2) Achieve universal primary education, (3) Promote gender equality and empower women, (4) Reduce child mortality, (5) Improve maternal health, (6) Combat HIV/AIDS, malaria and other diseases, (7) Ensure environmental sustainability and (8) Create a global partnership for development with targets for aid, trade and debt relief - http://www.un.org/millenniumgoals/

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- **Ownership**: developing countries set their own strategies for poverty reduction, improve their institutions and tackle corruption
- **Alignment**: donor countries align behind these objectives and use local systems, **Harmonisation**: donor countries coordinate, simplify procedures and share information to avoid duplication
- **Results**: developing countries and donors shift focus to development results and results get measured
- **Mutual accountability**: donors and partners are accountable for development results.

”[10]

As described before, there is an inseparable association between power and aid. Now it comes to understand if this relation is bidirectional, this means, if aid is able to affect governance’s quality or if governance is able to affect aid’s efficiency

There is a broad spectrum of different perspectives having the same outcome: the evidence that the amount of aid does not systematically affect the quality of policies (Collier,1997; Williamson, 1994; Rodrik, 1996; Alesina and Dollar, 2000).

On the other hand, there is a series of authors who do not find evidence that aid becomes more effective when it is given to countries with good policies (Boone, 1994; Lev, 1987; Lensink and White, 1999). However Burnside and Dollar (2000) were able to find some evidence but their correlation values were not significantly different from zero. The study had some limitations: not enough macroeconomics indicators to define growth and lack of quantitative measures comparing to the number of policies examined. Later Collier and Dollar (2001) where able to establish a significant correlation, by increasing to twenty the analysed components, covering diverse macroeconomic issues, structural policies, public sector management and policies for social inclusion, bridging Burnside and Dollar’s limitations.

Therefore it is possible to state that aid has a marginal efficiency, considering it as the increase of income, which depends directly on the quality of policies and on the amount of aid that a country receives (diminishing returns)(Collier and Dollar, 2001).

[10] Paris Declaration, 2005 http://www.oecd.org/document/18/0,3343,en_2649_3236398_35401554_1_1_1_1,00.html

Concluding, and under Collier and Dollar (2001) perspective, in order to maximize the reduction in poverty, aid should be allocated to countries that have large amounts of poverty (because in order to have significant effect on poverty reduction there is the need to have large scale poverty) and good policies (which ensures that aid is efficiently used).

2.3.1 Poverty-Efficient Aid Allocation

Assuming that all countries are different (culturally, ideologically, politically, socially, economically and at population density level), the levels of poverty and consequent absorptive capacities are different. This assumption implies that there will be a threshold of policy below which, even the first dollar of aid is not sufficiently productive to reduce poverty.

So, in order to establish this optimal allocation of aid fluxes knowing that recipients demand different allocations of inflows to increase aid efficiency, it's needed to define three fundamental arguments (Collier and Dollar, 2001):

- **Level of poverty –** What is the percentage of overall population living on poverty, and how extreme that poverty is.

- **The elasticity of poverty with respect to income** - (Bourguignon (2000) studies led him to discovered an empirical income elasticity of headcount poverty (1$ per day) of -1,9 in a cross section of countries. Poverty is negatively related to per capita income variations and the elasticity is sensitive to initial income inequalities. This measure shows what impact an increase of the mean income of a country has in the incidence of poverty of that same country. If the mean income rises 10% the poverty will have a reduction of around 20% once the correlation is negatively close to 2. It also states that if at the beginning there are any significantly inequalities on income distribution, the rise of the mean income wont have such a stronger impact on reducing overall poverty.

- **Quality of its policies -** Concluding, an efficient allocation of aid is made by diverting the total available aid, to countries that are able to have a positive productivity for the first dollar received. Those countries sustain different

constrains, and therefore will require different amounts of inflow to get the same marginal productivity.

This productivity (the number of persons taken out of the poverty line, per million of dollars) is as bigger has the best policies, the higher elasticity of poverty and the highest level of poverty.

2.4 Aid Transparency

Accessing aid fully depends on the availability of the data and on its quality (both from donors and recipients).

Easterly and Pfutze (2008) conclude that: *"The data on agency spending are inexcusably poor. Aid agencies are typically not transparent about their operating costs and how they spend the aid money. The data situation among aid agencies, such as the murky data available on operating costs of aid agencies and the no reporting of essential items like aid tying and sectorial shares of aid spending, would be unacceptable in most areas of economics in rich country democracies".*

The availability of the development data - information such as number of employees, overall agency expenditure (aid disbursements, administrative costs) - heavily relies on OECD's [11] international development statistics more specifically on Development Assistance Committee (DAC) to whom reporting is entirely voluntary. Although OECD DAC should work as an official enforcer and standardized data collector, it shows poor enforcement and low quality principles. (Easterly and Pfutze, 2008)

Without transparency, the process of monitoring aid, both by independent evaluators and taxpayers from donor countries, becomes virtually meaningless.

2.4.1 The Paris Declaration and the Accra Agenda for Action

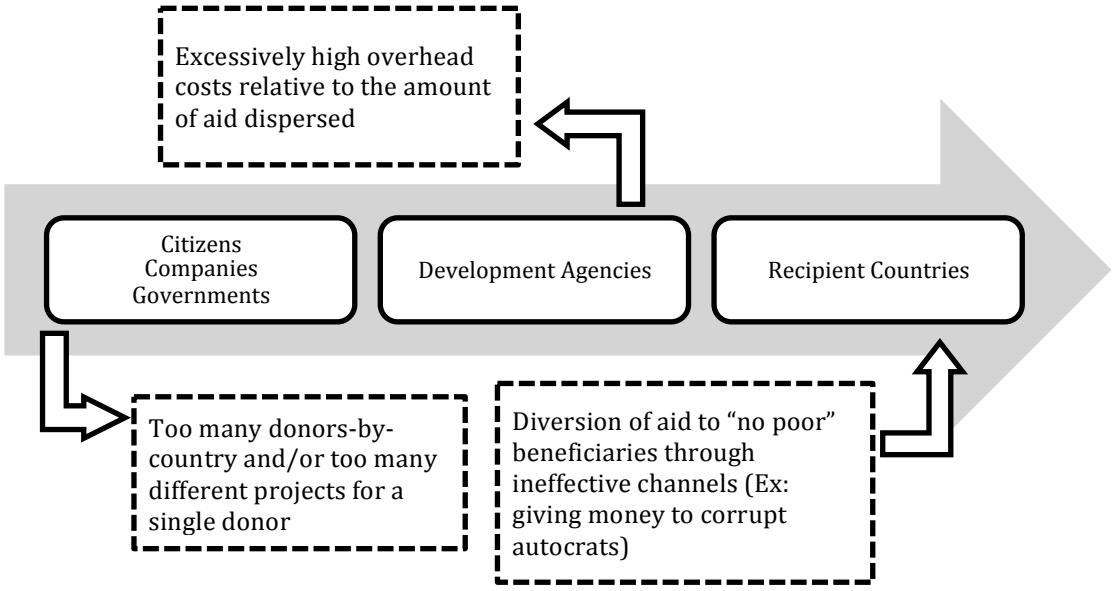
Following the rising concern about the role of aid in promoting development, international community went further and defined the 4 principles described above (Ownership, Alignment, Harmonisation: and Results), summed up in the Paris Declaration (2005) and then consolidated at Accra Agenda for Action (2008). This

[11] Organisation for Economic Co-operation and Development

commitment was thought and structured on the unanimity that developing countries need to have control over both the elaboration and implementation of their own national development plans in fully agreement with their own priorities, in order to make aid more effective.

Resulting from the global commitment in improving the effectiveness of aid, a set of causes arose. It is possible to establish an aid supply chain, and clearly identify specific problems in several levels, that affect productivity severely.

Figure 1 - Aid Intervinients on a "supply chain" scheme



Source: Author

2.5 Aid Best Practices

Easterly and Pfutze (2008), followed up by Easterly and Williamson (2011) have delineate what they consider to be the four main axes that limit aid best practices and therefore define aid's monitoring and control:

- **Specialization/Fragmentation**
    - Specialization, measures how fragmented or specialized aid is. Define if aid is spread among too many donors, too many countries, or too many

sectors for each donor. There have been Increasingly Complaints about donor fragmentation, clear examples can be found in recent literature[12].

- **Selectivity**
    - Selectivity measures the degree to which aid is disbursed according to type of regime (corrupt autocrats or free democracies) and according to the level of recipient country (if aid goes to the poorest countries).
- **Ineffective aid channels**
    - Ineffective aid channels measures the share of aid that is allocated to the categories defined as ineffective types of aid.[13]
- **Overhead Costs**
    - Overhead costs measure an agency's overall administrative costs comparative to the amount of aid it gives away.

2.5.1 Current Aid Practices

2.5.1.1 Specialization/Fragmentation

Currently, aid agencies manage aid with few strategic directions. Clear evidence of such conduct is how dispersing aid disbursements are: too many donors, too many countries, and too many sectors per donor. Such broad and diverse objectives forfeit the potential gains of specialization, leading the sector to unnecessary overhead costs for both donors and recipients governments.

Easterly and Pfutze (2008) have used Herfindal concentration index to calculate 3 different types o Aid Share: **1)** share of all net official development assistance (the probability that two randomly selected aid dollars will be from the same donor for all net official development assistance); **2)** share of aid spent by country (the probability that two randomly selected aid dollars will be from to the same country for any given donor)[14] and **3)** share of aid spent by sector (the probability that two randomly selected aid dollars will be from the same sector for any given donor)[15].

[12] Commission for Africa(2005,pp.62, 320), IMF and World Bank(2006, p.62), IMF and World Bank(2005, p.171), and knack and rahman(2004)
[13] Being food aid, technical assistance and tied aid, defined as the most ineffective aid by Easterly and Pfutze (2008)
[14] Presently, the probability that two randomly selected dollars will be from the same donor, given to the same country for the same sector use, is 1 in 2658.
[15] According to OECD classification

The conclusions were peremptory: aid effort is fractured among many different donors; each individual agency's aid effort is splintered among many different countries, not having a clear sectorial focus.

When the entire effort is so splintered, the consequences are evident: there are beneficiary governments receiving such small amounts of money that cannot justify by itself the coverage of fixed costs of granting and receiving aid[16], the more, the operating costs of actually helping people. Also another consequence is that each recipient must deal with a variety of small projects with diverse specifications from many different donors. The monitoring and control, the possibility to scale up gains from specialization is therefore compromised, creating high overhead costs for both sides.

In case of bilateral[17] donors, this degree of fragmentation is widely explained by the multiple agencies each donor has giving aid, frequently with overlapping responsibilities that together with the arrival of new areas of developing (environment, women in development, support to nongovernment organizations, and debt relief[18]) help to explain such fragmentation.

This degree of fragmentation is inconsistent with what agencies themselves say is the best practice[19]. Good specialization would be if each small agency were only specialized in a small set of responsibilities, projects or countries.

2.5.1.2 Selectivity

Easterly and Pfutze (2008) conclude that aid is far less effective at decreasing the headcount poverty when given either to corrupt dictators or to relatively wealthy countries. They have also registered variations in the type of regime that aid efforts is aiming, nonetheless those variations are not in line with agencies compliance with best practices, but instead, on recipient's classification changes. This means that the upsurge share of aid going to corrupt countries is determined virtually entirely by the increased corruption of the same aid beneficiaries, rather than by a change in the level of corruption. In these sense donor agencies appear to be unresponsive to political changes in recipient nations.

[16] For example in 2004 Austria spent $10000 in Cambodia, and Luxembourg spent $30000 in Indonesia
[17] Bilateral Aid Agency: Owned by a single nationality owner. Ex: National development agencies, IPAD-Portugal; USAID-United States of America; AECI-Spain)
[18] This categories had 0% in 1973 and in 2004 contributed for 12%
[19] Brainard (2007) estimates the USA has about 50 different bureaucratic units involved in giving aid with overlapping responsibilities

The International Country Risk Guide gives a precise understanding that the share of aid going to corrupt countries has oscillated, nevertheless there was an increase in early 2000's, which ironically match the timeframe over which started to be acceptable for donors to explicitly condemn corruption.

Easterly and Williamson (2011) have revised this pattern thoroughly, and again found that donors seem to be apathetic to alterations in the level of corruption, but purely continue giving to the same recipients they have already decided to give aid for other reasons. Once again current selectivity demonstrates a disparity between recent international aid effort rhetoric and actual performance.

2.5.1.3 Ineffective aid channels

Easterly (2007) grounded the three types of aid that regarded as fundamentally ineffective: aid that is tied to political objectives consists of food aid or aid in for of technical assistance.

When aid is tied to any kind of political agenda, it automatically implies a requisite that a part of the inflow has to be spent on goods from the donor country. This obligation creates an overcharging on the recipient, once it clearly augments the market power of the donor country's companies and often means no more than a camouflaged export advertising.

The food aid mostly entails an in-kind provision of foods by the donor country, which most of the times is available locally with far cheap prices. Food aid is fundamentally a convenient solution for rich nation countries to dump their spare agricultural production on low-income countries' markets.

OECD defines Technical assistance as "activities whose primary purpose is to augment the level of knowledge, skills, technical know-how or productive aptitudes of the population of developing countries." It is often used as a platform to create investment opportunities for donors and so is highly tied to political expectations ((Easterly (2007) was able to establish an predictably strong correlation (0.42) between a country's share of technical assistance and its share of tied aid). Therefore it often reflects donor primacies instead of carry out beneficiaries' priorities.

There is a visible trend of the international aid effort on significantly decreased the amount of tied aid, food aid, and technical assistance, with the most relevant enhancements being recorded in the tying status of aid.

2.5.1.4 Overhead Costs

International community through the international aid effort, agree that extreme overhead costs should be avoided[20]. There are not a benchmark defined about how much aid spend in overhead is "too much", nonetheless having high expenditure ratios on this field may be perceived as a diversion of aid funds to sustain bureaucracy rather than direct funds to supposed beneficiaries. On the other hand, this measure cannot be close to zero, in order to assure a good management of the aid effort (which requires fiduciary oversight, monitoring and evaluation, project design and implementation)

When Easterly and Pftuze (2008) compare multilateral[21] and bilateral agencies, conclude that multilateral aid agencies have expressively higher administrative allocated budgets than bilateral aid agencies; this is explained entirely by the fact that multilateral agencies have far higher remunerations and benefits for their employees.

Although there is high variation transversal to all agencies, UN agencies frequently presents the highest ratios of operating costs to aid, with significant margins. UNDP occupies the leading place on spending: administrative budget is higher than what it gives in aid.

On the other hand, bilateral agencies manage to have half of the employees per amount of aid disbursed than multilateral agencies have. Once again, UN agencies are the worst performers: while Norway agency's employee accounts for 1000 dollars of aid given, a World Food Program (WFP) employee accounts for 3 dollars and a UNHCR's employee for 7 dollars. These spending ratios raise concerning questions about productivity and how heavy some agencies fixed structure are (although the multilateral performance is highly constrain by its diffuse ownership, which attributes different importance and authority levels to its donors).

[20] (IMF & World Bank, 2005, p171)
[21] Multilateral aid Agency: Multi-Nationality joint development initiatives/organizations. Ex: African Development Bank; UNDP; Caribank

2.5.1.5 Overall Panorama

Easterly and Pfutze (2008) found an important and significant correlation between the ranking on specialization (the Herfindahl) and the ranking on "lower overhead" of 0.37. It is a clear sign pointing out in the direction that more specialization should lead to lower overhead costs.

Also, the effects of an excessive bureaucracy (that has an interest in keeping its actions inscrutable) may explain both the significant correlation (0,47) between selectivity/"avoiding ineffective channels" and the "lower overhead"/transparency correlation.

Another relevant result is the negative pairwise correlation between specialization and selectivity (– 0.29). This correlation may arise due to the fact that donors have historical bonds to some recipients (colonial reminiscences) that frequently ignore the "health" of the democracy.

Easterly and Williamson (2011) denote an important and positive trend regarding the ineffectiveness of channels, where there is a global overall decrease of aid in form of food aid, tied aid, and technical assistance.

Although transparency criteria is currently showing some signs of improvement, the overall performance keeps on being extremely poor, especially after realizing the importance and emphasis given by the international community to this specific subject. The fragmentation of aid, even on the smallest agencies, is becoming increasingly worst since the late 1960s. There are not any clear sign about any turnaround on this topic's future performance.

Regarding selectivity, Easterly and Williamson (2008), indicate a specific concern about aid disbursements to corrupt countries: the only visible changes coincide with changes on the countries classifications and not as an objective response to lack of effectiveness.

Another remarkable finding explicated by Easterly and Pfutze (2008) is the prevalence of the multilateral development banks among the top-ranked agencies. This observation may give some directions on future solutions.

The extremely poor quality of the information, its unavailability and the tremendous lack of monitoring on operating costs, aid tying and sectorial shares of aid spending, makes the international aid effort's data highly unreliable and inadmissible for any rich country entity.

2.5.2 Monitoring and Control

Development Assistance Committee (DAC) is an international forum composed of OECD member states with the primary objective of confers about development and poverty reduction in developing countries. It works as a stage were world's major donor countries may present their point of views on development, having two major objectives: understand how international development effort may contribute to the ability of recipient countries to be involved in the global economy, and the capacity of people to overcome poverty, enroll on development and contribute fully in their societies.

It is a decision center that goes across several different organizations such as World Bank, the International Monetary Fund and UN Development Program.

All the members' states are assigned with objectives and resolutions. Therefore the committee issues guidelines on the management of development aid (together with the annual OECD Journal on Development and the Development Co-operation Report).

Was the collaboration with world bank regarding aid effectiveness, has described before, that resulted on the approval of the Paris Declaration on Aid Effectiveness at the DAC High Level Meeting in 2005.

3 Research Methodology

3.1 Research Methods and instruments

The objective of this specific section is to explain and describe the methodology as well as the instruments used to structure a possible solution for the research question.

In order to structure a scientifically credible methodology, the following research tools were used:

1-Analyse cross multivariable aid development data to seek relevant correlations

Currently, more than ever, there is an increasingly amount of data available, with some credible sources and representative standards. The main objective is to study and understand how this specific data correlates and behave within its contemporaneous constrains. We will be conducting a broad general analysis, using the best available proxies on growth and development, to trace any evidence on the dependency of the evaluated data.

2-Interview to decision-making position

As described in Figure 1, all aid intervenient, donors and recipients, are people. People have stories; have retained knowledge and diverse points of view that cannot be translated into analytical data. Hence the understanding of how decision-making role is leading current aid effort and how backgrounds, motivations and ideological views can define aid, is crucial to the validation of any possible conclusion.

3.2 Research Question

As aid effectiveness becomes a highlight on the international aid effort agenda, the responsibility of donors and players regarding the returns on such flows appears as a relevant object of analyses.

Nonetheless, examples of extreme situations are becoming more blatant, and the consequent need to provide enlightening answers, is clearly questioning the purpose of the existent monitoring and control commitments. What is the extent of the relation between assistance towards development, and development itself (both human and economic)? What should be the focus regarding type, transaction and aim, when it comes to disburse aid?

Those were the guidelines that structured this dissertation's main research questions:

R.Q.1: Is there any relation between the inflow of aid and the overall development (human and economic) of the poorest countries?

- R.Q.1.1: To what extent, does sectorial directed aid, relates with the same sectorial development, of both economic and human progress?

3.3 Research Model

Our primary objective is to understand if there is a direct relation between foreign aid in form of official development assistance and both economic growth and human development.

We start from the premise that aid's primary objective is to promote socio-economic development, therefore we are going to test if and to what extent this goal was achieved by crossing indicators of economic growth and human development with total inflows of aid in form of ODA, given to a specific country in a given year.

As any development study, our exercise is highly dependent on a longitudinally analysis, once development can hardly be measured in short-term periods.

As previously stated, our question arose from the empirical evidence of extreme low human development, and the focus of our research met that specific characteristic. Therefore our sample was defined based on the human development approach (Appendix B, Section 7.2.2), that evaluates both human sustainability and wellbeing. We have chosen the ten lowest ranked countries on HDI index, Burkina Faso, Burundi, Central African, Republic, Chad, Congo (Democratic Republic of the), Guinea, Liberia, Mozambique, Niger, Sierra Leone, and we have also added to the sample the main motivation for this dissertation's question, Haiti.

These countries are organized, relatively to each other, and according not only to its HDI position but also accordingly to each disaggregated HDI component, in the following way:

Table 2 – Relative Position of the Ten lowest HDI ranked Countries (Including ranking according to disaggregated index)

Country	HDI	Income Index	Education Index	Health Index
Guinea	1	4	6	4
Central African Republic	2	6	4	8
Sierra Leone	3	5	5	10
Burkina Faso	4	1	9	2
Liberia	5	10	1	1
Chad	6	2	8	7
Mozambique	7	3	7	6
Burundi	8	8	3	5
Niger	9	7	10	3
Congo Democrat. Republic	10	9	2	9

Source: International Human Development Indicators, UNPD.com

With Guinea being the most developed country of the list, Congo Democratic Republic the worst of and Haiti assuming in every field, the relative eleventh position.

3.3.1 Analysis 1

The research method was subdivided in two groups, in order to evaluate separately aid's consequences on economic growth by one side and human development on the other.

(1) Cross the net ODA as a percentage of the country's GDP received with an economic growth proxy: GDP (Appendix 8.2.1) per capita Growth[22] was used as the economic growth proxy.

(2) Cross the net ODA as a percentage of the country's GDP received with the explanatory indicators of Human Development remaining main levels: Health and Education. In order to understand if aid was indeed promoting human development and to what extent, the chosen key indicators were Mortality rate, infant (per 1,000 live births) and School enrolment, primary (% gross), all from World Data Bank. For the two perspectives there were a set of good enough proxies for efficiently measuring development; the choice of such indicators was

[22] From World Bank Development Indicators

entirely based on the availability and quality of the data and on its credibility as good development proxies.

3.3.1.1 Sample Description

Regarding the economic growth measure, with the exception of Mozambique, Haiti and Guinea, which only had an average of 20 observations, the remaining 8 countries presented a complete time series of 50 years. As for the indicator for health progress (infant mortality per 1000 births) registered a good availability with an average of 45 entries per country, on a 50-year time frame. The indicator with the least data available, regarding not only the reduced number of entries but also its discontinuity, is school enrolment: with 20 entries per country on average.

3.3.1.2 Variables

Accordingly with the aim of this research, hereafter the indicators will be classified as dependent or response variables and independent or explanatory variables, as given in the following table:

Table 3 – Variables used in the analysis

Independent Variable	Dependent Variable	Analysed Level
Net Official Development Assistance Received/GDP	GDP per Capita Growth	Economic Growth - Human Development Standard of Living
	Mortality rate, infant (per 1,000 live births)	Human Development - Health
	School enrolment, primary (% gross)	Human Development - Education

Source: Author

Independent Variable

Following OECD-DAC definitions, aid disbursements are categorized and described in Section 3.3.3. We consider that the relevant flow of aid, when it comes to promote general development, is Official development assistance. It is the most accurate indicator regarding aid flows, once is the one providing the most extensive time series and the one with the highest percentage of proven ineffective untied aid. Regarding the origin, all registered donors will be considered (bilateral, multilateral and non-DAC

members) and interchangeably integrated into the analysed yearly flow, once the primary objective it is not to study the relevance of donors but the overall effort impact.

Since we intend to analyse aid as a promoter of a country's development, we believe that it is appropriate to understand aid according to a country's own resources, once those are the resources that will then promote development. Therefore we will use aid as a percentage of gross domestic product

Dependent Variable

For gross domestic product growth per capita, the primary source for the collection of such data was the World Bank Database. Once we are interested in understanding if there is a direct impact of aid in promoting development and in measuring the dimension of such impact, it seems appropriate to use the yearly variation of GDP and not its absolute values. Using the indicator at constant prices will eliminate the impact of inflation.

The major purpose of using GDP per capita growth as the best economic growth proxy is to understand the possible relation of ODA with economic growth. On the other side, it will work as HDI's first level representative. Since 2010 HDI uses GNI instead of GPD growth per capita to measure standard of living. We will keep using the previous HDI indicator mainly because there are not enough available data on GNI for the chosen sample, and also because GDP growth per capita works better as an economic proxy than the national income.

Following the human development index composition, we choose two indicators from HDI's remaining Sub-levels: Education and Health. As a consequence, the evaluated indicators were: Mortality rate, infant (per 1,000 live births), a commonly accepted health indicator, with an extensive time series, measured consistently over time, for a relevant number of years (the initial objective was to study an even more precise indicator in health matters, the maternal mortality rate, but the poorly available data and its inconsistent measurement led to its replacement). Finally, to scrutinize the development in education, we have chosen Primary school enrolment, a more specific indicator, which measure not only the availability of specialized labor (teachers to teach), but also infrastructures (schools to enroll), and social constrains (pupils allowed to study).

3.3.1.3 Primary Conclusions

The key point of this research is to investigate the extent to which values of former variables are related to each other and, if applicable, the strength of this relationship.

In an attempt to explore and model the relationship between each pair of variables (Net Official Development Assistance and GDP per Capita Growth, Net Official Development Assistance and Infant mortality rate, Net Official Development Assistance and School enrolment) we used simple linear regression analysis[23]. As a way to visualize possible relations, a scatterplot for each pair of variables under study was drawn. These scatterplots does not provide any evidence about a possible linear relation between the variables.

Nevertheless, we followed our study by computing the correlation coefficient (r) and the coefficient of determination (r^2). These values are given in the following table:

Table 4 – Correlation coefficients and coefficients of determination for dataset 1

Sector	Coefficients	Burkina Faso	Burundi	Central African Republic	Chad	Congo (D.R.)	Guinea	Liberia	Moz.	Niger	Sierra Leone	Haiti
ODA/GDP Per Capita G.	R	0,003	-0,077	-0,108	0,006	0,272	-0,326	-0,077	0,052	-0,083	0,327	-0,092
	R2	0,000	0,006	0,012	0,000	0,074	0,106	0,006	0,003	0,007	0,107	0,009
ODA/School Enrolment	R	-0,609	-0,052	0,029	-0,734	0,045	-0,904	0,579	-0,804	-0,386	0,879	0,316
	R2	0,371	0,003	0,001	0,538	0,002	0,818	0,335	0,647	0,149	0,773	0,100
ODA/Infant Mortality	R	-0,411	-0,347	0,512	0,425	-0,218	0,888	0,473	0,215	0,290	-0,659	-0,287
	R2	0,169	0,121	0,262	0,180	0,048	0,789	0,224	0,046	0,084	0,434	0,082

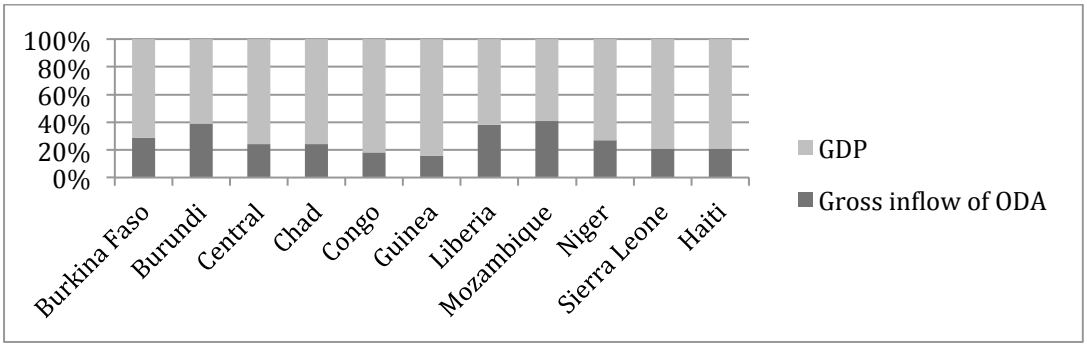
Source: Author

The analysis of the correlation's coefficients shows that the relation between the total net ODA given to a country and the effect on its economic growth is insignificant, with Guinea and Sierra Leone flagging in opposite ends, the former with R:-0,326 and the latter with R:0,327.. This could suggest both a decrease on economic growth when there is an increase in the ODA flow or an economic boost promoted by an inflow of aid. Nonetheless the values are too low to be significant.

[23] Statistical technique that attempts to model the relationship between two variables by fitting a linear equation to the observed data. The fitted regression line is given by $\widehat{y} = \hat{\beta}0 + \hat{\beta}1x$.

Another curious finding is the fact that the three significantly higher correlations (positive and negative) amongst the bottom ten (Congo, Guinea and Sierra Leone) are the ones that, on average, receive the lowest amount of ODA according to their GDP, as described below on Chart 2. Even though there are some standardized evidences, all the conclusions are statistically insignificant since the correlations presented are extremely low.

Chart 2 - ODA as percentage of Country's GDP



Source: From World Bank, 2011

The objective of understanding the possible relation of ODA and development should therefore be considered, for the bottom ten, as non-evident.

The question relies now on the extreme limitations this correlation is subjected to. Besides all limitations, regarding indicators, causality effects, sample's dimension or variables dependency, there is one main limitation that suggested us another possible approach to tackle the problem.

The lack of focus, and also the extensive level of aggregation, of our dependent variable are questioning the validity of such analysis. The total fluxes of aid have a clear limitation regarding its purpose. Basically we intended to infer a consequence, when not every aid aims the result of the productive factors. It also ignores possible relations that, due to its objective, have delayed consequences on growth. On the other hand, examples such has Chad, when from 2006 to 2007, aid aiming humanitarian purpose, doubled its share in the total ODA, while the growth of the total ODA flows reached a mere 9%[24] - therefore there is a clear loss of aid directed to other sector in favour of humanitarian effort. The main conclusion is that this indicator, due to its wideness, does not reflect the impact on specific sectors, which we proposed to study. These limitations have reshaped

[24] OECD - http://www.aidflows.org/

our methodology, and in order to follow a policy of suitability, we have therefore disaggregated the data into another exercise.

3.3.2 Analysis 2

For the purpose of eliminating the "noise" of such broad indicators, as the ones used before, and in order to overcome some of their limitations (described in the next section), the research method was once again subdivided in two groups. The objective was to evaluate aid's consequences on economic growth and on human development, separately. The main and most significant differences rely on the choice of ODA by sector where it was used. ODA will now be desegregated according to OECD's uses of ODA by sector:

(1) Cross the Gross ODA received by a specific country and **used in Production according to country's own resources (GDP)** with an economic growth proxy: GDP (Appendix 8.2.1) per capita Growth[25].

(2) Cross the Gross ODA received by a specific country and **used in Education, Health and Population according to country's own resources (GDP)** with the explanatory indicators of Human Development remaining main levels: Health and Education.

Table 5 – Variables used in the analysis

Independent Variable Disaggregated ODA	Dependent Variable	Analysed Level
Adjusted Net Official Development Assistance used for Production/GDP	GDP per Capita Growth	Economic Growth - Human Development - Standard of Living
Adjusted Net Official Development Assistance used for Health and Population/GDP	Mortality rate, infant (per 1,000 live births)	Human Development - Health
Adjusted Net Official Development Assistance used for Education/GDP	School enrolment, primary (% gross)	Human Development - Education

Source: Author

[25] From World Bank Development Indicators

Changes to the Independent Variable – From General to sectorial

The main difference with the first statistical exercise is the disaggregation of data, narrowing its target by sector and use. This will obliterate the "noise" caused by a series of external factors that can drastically change the shares of aid allocated to different sectors, given the same amount.

Due to the reduced availability of data from OECD Database, of sources, types and uses of ODA, the time series of these variables is now far more reduced (2005-2009), nonetheless expectably capable of providing a valid conclusion. Once GDP is the sum of a country's overall productive factors, and accordingly to the type of sectors available on this disaggregated data, seems appropriate to cross the indicator responsible for the evolution of all productive factors of a country and the amount of ODA disbursed for each sector[26]. The fact that the main objective is not to have a cross section between countries but instead, an independent analyses of each country, the definition of aid sectorial inflows as a percentage of a country's GDP, will give a clear focus on aid intensity and on the specific reality of each country.

Finally, we will be using the adjusted net total values for inflows of ODA, contrary to the Net values used before. This difference relies on the fact that the net values are not available for the chosen filters. Average differences of 10% (regarding not described fees) between gross and net values were considered in the exercise.

Changes to the Dependent Variable

All Independent Variables remain the same, as the best available proxy regarding the measurement of the targeted levels: economy, education and health.

3.3.3 Results

With the exception of Liberia, Sierra Leone and Haiti, for which we were unable to find any data on the educational level, all other indicators from all the other countries present 5 entries per indicator corresponding to the five years analyzed. The following table, resumes all the correlations between the sectorial directed aid and its corresponding indicator (for economic growth, education and health development):

[26] Production Sector: Agriculture, Forestry, Fishing, Industry, Mining, Construction, Trade Policies and Regulation are included on the Production Sector
Education Sector: All levels of education
Health Sector: General Health

Table 6 – Correlation coefficients and coefficients of determination for dataset 2

Variable	Coefficient	Burkina Faso	Burundi	Central A.R.	Chad	Congo D.R.	Guinea	Liberia	MOZ	Niger	Sierra Leone	Haiti
PGDP /G[27]	R	-0,797	0,375	0,891	0,566	-0,266	-0,535	0,185	0,354	0,237	-0,214	0,127
	R2	0,636	0,141	0,794	0,320	0,071	0,287	0,034	0,125	0,056	0,046	0,016
EGDP /SE[28]	R	0,658	-0,018	-0,662	-0,404	0,610	-0,800		-0,348	-0,768		
	R2	0,433	0,000	0,438	0,163	0,372	0,639		0,121	0,590		
HGDP /MO[29]	R	-0,653	-0,931	0,060	0,781	-0,793	0,873	-0,901	-0,935	-0,639	-0,777	-0,889
	R2	0,426	0,867	0,004	0,610	0,629	0,761	0,812	0,874	0,408	0,604	0,790

Source: Author

Looking to the overall correlation strength is now clear the first analysis weak conclusions led us to a more significant exercise. It is far more secure, assume now, that aid, may explain to some extend both growth and decrement on some key development indicators, to the 10 poorest countries (plus Haiti). There was an average variation (positive or negative) of around 0,5 on the overall correlations, with this sectorial approach.

Although there were some exceptions (Burkina Faso and Central African Republic), the general relation between the inflow of aid and any variation in its economic performance, prove itself too weak to be noteworthy. The two highest significant correlations, Burkina Faso and Central African Republic, present opposite relations; and when looking to the overall amount of ODA received as part of their GDP as a possible explanation, the cause of this contrast remains inconclusive, once both countries receive, on average, the same amount of ODA/GDP.

Regarding the two, more specific, levels of HDI the possible patterns are more obvious.

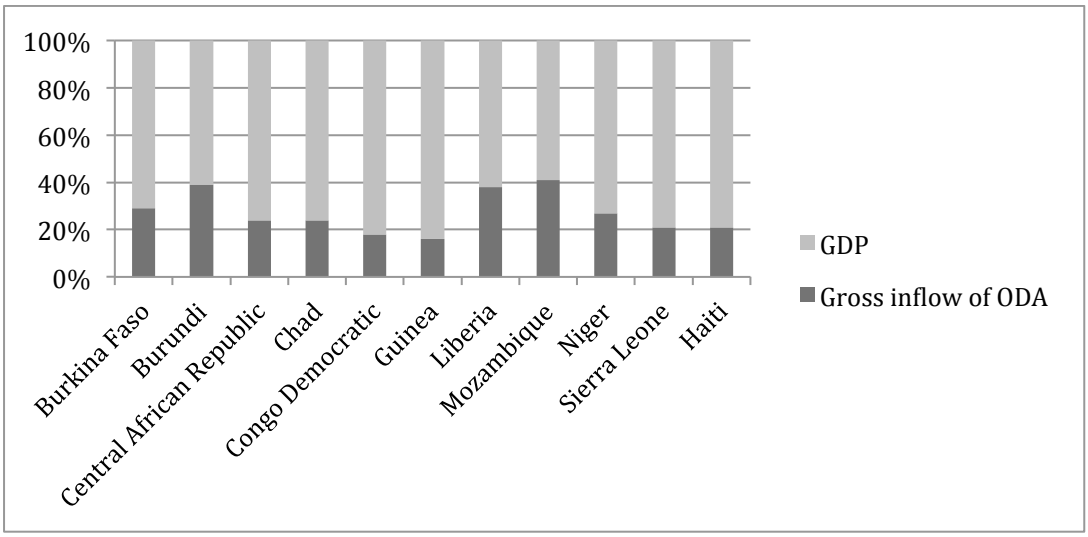
On the educational field, and even with two missing countries due to inexistent data (Liberia, Sierra Leone and Haiti), the overall correlation also had a variation (positive or negative) of around 0,5. Although there are several higher correlations, only two are higher enough to be significant (Niger and Guinea), presenting both positive coefficients which means that the influx of ODA to the education sector may explain the increase in

[27] PGDP / G - ODA directed to Production according GDP, correlated with GDP Per Capita Growth
[28] EGDP / SE - ODA directed to Education according GDP, correlated with School Enrolment
[29] HGDP /MO- ODA directed to Health according GDP, correlated with Infant Mortality

the percentage of new enrolled pupils, and therefore that might promote educational development on this two specific countries. The remaining majority presents medium correlations with coefficients around 0,5.

Finally, due to the specific nature of the health proxy or to more effectiveness on share of aid directed to health, the overall correlations presented an increase of around 0,6 in the coefficients. It seems appropriate to assume a clear pattern of high negative correlations (with the exception of Chad and Guinea), with more than 80% being significant high coefficients, and more than 60% being negative significant high coefficients.

Chart 2b - ODA as percentage of Country's GDP



Source: From World Bank, 2011.

Burundi, Mozambique and Liberia, the three more intense recipients (highest ODA/GDP) assume the three most significant coefficients in the health field, with r overcoming 0,9; also the three countries share a high coefficient of determination (R^2), which means that in the fitted model HGDP has strong explicative power in the negative variation of the Infant Mortality Rate.

The cross analysis HGDP/MO, that evaluates the relation between ODA for health and health development, is the only one, for this specific set of countries, showing strong linear relation between variables. It also presents high coefficients of determination factors, which may explain considerable changes in health conditions trough the inflow of ODA for Health.

4 Discussion of the Results

What is the possible inference of this result? Well, the first exercise clearly emphasized the evident lack of relation, of such broad indicators, and therefore, the considerable volatility to which aid disbursements are subjected.

The yearly reallocation of aid according to different sectors within the same beneficiary needs to have a relevant negative impact on pursuing and complying long-term strategic programs. It's quite evident that the overall budged keeps constant (the value disbursed to that beneficiary is the same), but its periodical allocation to different internal sectors changes greatly, without any specific pattern. This finding led us to the second exercise.

The attempt to eliminate these variations, by crossing sectorial objective disbursements with respective growth indicators, gave us some answers. In fact the analysis for the health indicators has revealed itself as the more significant one, with a pattern of relation and improvement according to the inflow of ODA.

By one side, it was somehow expectable, that social indicators (health and education) would have high significance, since both indicators are more stable, more representative and more "straight forward" in the application of resources due to its high practical component. Nonetheless education fell short on expectations, with no special relevant pattern to be concluded from the exercise, besides the fact that within the group that shows the strongest correlation, the majority points out to a negative link. This might somehow suggest the negative impact that the flow of aid could have on the educational performance of these countries.

Regarding effectiveness, the two exercises didn't allow to infer any major or relevant pattern on the eleven countries analysed. Nevertheless, the overall results showed significant proofs towards the assumption that the current aid effort, namely ODA, do have impact on the economic performance and human development. Following these indications, it is clear that the lack of strategy on long-term structured policies is compromising aid's effectiveness. Therefore if ODA is disbursed with clear strategic guidelines, the returns might me more meaningful.

Consequently, and based on previous studies from a wide range of authors, we have defined a framework. That is no more, than a set of strategic guidelines, made to evaluate and disbursed aid, with the intention of maximize returns.

4.1 Aid Effectiveness Framework

This specific framework arises as a conclusion over the main literature available, and it's supposed to work not only as set of guidelines to promote the best aid practices possible, but also to help access whether there are contextual conditions to effectively distribute aid.

The framework intends to provide a clear strategic focus on the disbursement of aid regarding all stakeholders, regarding the amount of aid disbursed and regarding its overall potential.

It will work as a tool developed to determine a country's receptivity variables trough the understanding of its contextual specificities; the type of aid effort to be endorsed; the costs and resources to be allocated to its disbursement; and the extent until which its potential was reached.

The data gathered from the framework may also be used to guide policy and to define strategic paths at both micro and macro environments.

The approaches, which produce the most efficiency for the least amount disbursed, should be given priority.

Table 7 – Aid Framework Description

Context	• Level of Poverty • Governance • Selectivity
Amount	• GDP%
Delivery	• Specialization • Aid Channels • Overhead Costs
Results	• Economic Growth • Human Development • Reduced Poverty

Source: Author

4.1.1 Level Analysis

4.1.1.1 Context

The contextual analyses of an aid recipient country, should taken into account different indicators, in order to access the country's propensity to receive and manage aid appropriately:

As described in section 2.3.1, the intrinsic differences between sovereign states will imply variances in the distribution of aid. In order to properly allocate aid, with a poverty-efficiency perspective (Collier and Dollar, 2001), there is the need to understand the level of poverty that the country is subjected to, the quality of its policies (once it directly affects the productivity of each dollar given), and the outset differences in the distribution of the income (Bourguignon, 2000).

On the other hand, and as explained in Section 2.5, selectivity correlates the disbursement of aid according to the regime's type of the recipient country. Easterly and Pfutze (2008) followed by Easterly and Williamson (2011) have conclude that aid's productivity is far lower when given to a country with evident democracy problems.

Table 8 – Aid Effectiveness Framework, Context Analysis

Level	Measure	Proposed Indicator	Note
Poverty	Welfare	• Household final consumption expenditure per capita (constant 2000 • US$)	Consumption is far more close to well-being (capability of having enough to meet basic needs), once includes not only income (which have high fluctuation in these contexts) but other relevant measures such as availability, access to credit, etc.
	Poverty Indicator	• Poverty headcount ratio at national poverty line (% of population)	It already entails the national absolute poverty line (based on actual cost of living and on households standards), adequate to national context and specifications.
	Income Distribution	• Income share held by: • Highest 20% • Second 20% • Third 20% • Fourth 20%	
Governance	World Governance Indicators – World Bank	• Voice and Accountability • Political Stability and Absence of Violence • Government Effectiveness • Regulatory Quality • Rule of law • Control Corruption	This data set tries to provide a snapshot over the governance and policies of the majority of the world economies. It has a relatively extensive timeframe, its methodology is mainly based on information from the main social stakeholders and from international policy assessments (CPIA)
Democracy	Level Of Democracy	• Polity IV Individual Country Regime	Defines and characterize, based on a 60 years timeframe, the main alterations to levels of democracy. It also analyses the level and degree of fragility.

Source: Author

Best Outcome: Aid productivity (the number of persons took out of the poverty line, per million of dollars) is as bigger has the best policies, the democracy levels, the higher elasticity of poverty and the highest level of poverty.

4.1.1.2 Amount

Just like the type and the shape of aid disbursed, the amount itself comes up as a crucial decision regarding the avoidance of diminishing returns.

As referred in section 2.1, there are clear evidences of the existence of an aid Laffer curve. The thresholds, regarding the ratio AID as percentage of the GDP, vary according

to the author. Following Collier and Dollar perspective we assume the maximum value of 18,5%,(aid/gdp) as the threshold, below which aid has positive returns.

Table 9 – Aid Effectiveness Framework, Amount Analysis

Level	Measure	Proposed Indicator	Note
Amount	Ratio Aid/GDP	• Net official development assistance received (constant 2009 US$) • GDP (Constant US$)	The maximum value should be around 18,5% of GDP

Source: Author

Best Outcome: Total aid disbursements should not exceed the limit of 18,5% of the recipient country's GDP in order to not compromise aid efficiency.

4.1.1.3 Delivery

Specialization, Aid Channels and Overhead Costs

As mentioned before, and accordingly to Easterly and Pfutze (2008), followed up by Easterly and Williamson (2011), the management and delivery of aid should engage with the best practices possible: both the delivery players as the disbursements channels should not only comply this specific guidelines but also acting proactively to start changing the already existent ingrained bad habits:

- Specialization (measures how fragmented aid is. Defines if and until which extent aid is fragmented amongst too many donors) should be high in order to maximize aid potential and increase its effectiveness.
- Aid Channels (If and how much aid is allocated to ineffective types of aid – food aid, tied aid and technical assistance) should avoid ineffective types of aid.
- Overhead costs (measures agencies' overall administrative costs compared to the amount of aid disbursed) should be as lower as possible, maximizing aid's productivity.

Table 10 – Aid Effectiveness Framework, Delivery Analysis

Level	Measure	Proposed Indicator	Note
Specialization	Concentration of Donors	• Aid Agencies' share of all net official development assistance • Shares of aid Received by country • Shares of aid Received by sector	Through the Herfindahl index it is possible to understand the degree of concentration of types of aid and donors
Aid Channels	Type of Aid	• ODA by type of flow	Understand until which degree the aid disbursements are made in form of general budget support, sector budget support, projects, or support through non-governmental channels being these non-for profit or for-profit. Understand until which degree is aid being disbursed in inefficient ways
Overhead Costs	Official development financing per employee	• Total staff employed • Administrative Costs	Total staff employed instead of total plus temporary staff employed, due to the fact that temporary employment usually is in form of consultancy, whose costs are included in administrative costs

Source: Author

Best Outcome: Policies should be developed in order to have a clear aid focus (high concentrations, disbursed through the avoidance of ineffective types of aid, with the lowest possible cost associated).

4.1.1.4 Results

Ultimately, aid should promote development. Considering development of both the country (economic) and of its population (human), aid should by one side promote economic growth and improvement of the system as an whole, and on the other side should promote human development over the three main levels which it is measured (living standards, education and health).

Table 11 – Aid Effectiveness Framework, Results Analysis

Level	Measure	Proposed Indicator	Note
Economic Development	Aid as a promoter of economic growth	GDP per capita growth (annual %) Gross Disbursement of aid flow used in Production Sectors	
Human Development	Living Standards	Gross Income per Capita	
	Education	Literacy rate, adult total (% of people ages 15 and above) School enrolment, primary (% gross) Children out of school, primary	Set of alternative indicators in order to bridge the lack of data, common to aid recipient countries
	Health	Life expectancy at birth, total (years) Children with fever receiving antimalarial drugs (% of children under age 5 with fever) Maternal mortality ratio (national estimate, per 100,000 live births) Mortality rate, infant (per 1,000 live births)	Set of alternative indicators in order to bridge the lack of data, common to aid recipient countries

Source: Author

Best Outcome: A strong correlation of inflow of aid with a good economic growth proxy, and with the improvement of living conditions.

All the indicators proposed to the execution of this framework are available in World data bank, World governance indicators, Polity IV and OECD.

4.1.2 Framework Limitations and future options

This section was, as described in the dissertation structure, commented by Phil Harding, Team Leader for Wealth Creation, Department for International Development (UK), Freetown, Sierra Leone.

In this framework, the climate change and the environment concern are absent when this is a theme that is rising to the top of the international agenda in terms of aid. There are two sides to be evaluated: on the first one, the amount of aid disbursed to environmental field and on the other side, the country's performance on responsible environmental practices. Although there was an acknowledgement of the importance of this level, its analysis is fairly difficult, because the existent data is quite insufficient to build a credible and strong assessment. OECD does not precisely explicit the amounts of ODA disbursed specially to environmental protection, and at the same time the available indicators for the performance analyses are also quite deficient.

Currently, there is a big debate about whether donors should just give money to a government against an agreed results framework (which craves a poverty reduction strategy) and then allow government to manage and organize themselves the business of development, or whether donors should try and keep control over their funds. Or even if a government is too corrupt or inefficient to give the funds to local aid players in order for them to distribute it. Northern European countries tend to have been more supportive of it than southern European countries: The UK government, for example, has been a huge supporter of general budget support; The Portuguese government has not.

Another dimension to the whole aid debate: the non-traditional or new donors, also pointed out by Harding during the interviews. These include the BRICS (Brazil, Russia, China, India and South Africa) who are entering the aid arena "but not necessarily with the same orientation or views about effectiveness as the traditional donors" – Harding. The measurement of such intention is nearly impossible, since the usual ties disguised with long-term diplomacy are now based on cultural specificities, different types of democracy and on abnormal economic growth (all, special characteristics that define the new BRICS paradigm).

4.2 Limitations

The nature, objective and sources of this specific study, imply a set o different limitations, which due to its relevancy, are noteworthy.

When it comes to collect credible, representative enough data, the ten least developed countries, due to their fragile situation, still represent a challenge. Although the study found a diversity of new databases (following the rising concern on monitoring aid), its quality and availability it's still extremely reduced.

Both exercises described above, faced an outset bilateral limitation: The overall scarcity didn't allow sectorial specialization, but the lack of specialization was conditioning the results.

This shortage on data, alongside with unclear sources, is a surprising finding for an international aid effort that already had three international forums completely focused on this subject.

This had clear implications on the establishment of indicators for the exercise. Firstly, the primary conclusions led to a second exercise that was unable to use the same type of aid. For the first exercise, and as seems more appropriate, it was used the total net value for the ODA inflows. When our study aimed a more focused analysis according to sectors, the only flows available were the gross total flows of ODA. Although we have consider an average 9,5%[30] difference between net and gross ODA values (adjusted net value), this limitation led for sure to the inclusion of unclear fees on the sectorial flows, that don't meet the purpose of our study.

Also the choice of indicators, as development proxies, is by itself a limitation to any study. What increases the margin error is once again the lack of quality and availability of the studied data, which led to the health indicators substitution. We believed the maternal mortality rate would be a stronger proxy, due to a more direct relation to immediate quality of health care service – the probability of a mother die is far more dependent on the quality of basic health care than the probability of child. Nonetheless, we couldn't find the appropriate number of entries to go forward with this choice.

Moreover, using only one broad indicator as a proxy for the entire sector cuts out scope from the exercise. The measurement of a specific sector growth might also be structured with the aggregation of several more specific indicators, covering the sector in a more detailed way. Regarding health for example, we have only used Mortality rate (the only with relevant number of entries), when we could have aggregated several potential proxies such as: Prevalence of HIV, Life expectancy at birth and maternal mortality, that would have shown us different perspectives over a nation's overall healthcare services.

Due to our study-limited scope, we have only studied a linear relation between the variables. The low number of entries and their dependency didn't allow us to study any other types of correlations.

Finally, there is also a causality relation that this study cannot precisely address. Our correlations may translate the problem, but they cannot address the precise cause. For

[30]http://stats.oecd.org/

example, would be the weak economic performance that is attracting more flows of ODA or the level of ODA is such that is not promoting economic growth?

5 CONCLUSIONS

The aim of this dissertation was to understand and measure the degree of connection between real inflows of aid, and overall development. The literature on this subject is indeed quite extensive but several times, quite inconclusive also. First the major obstacle was the definition of growth (economic and human), and mainly the number of externalities that affect and shape growth itself. This is further emphasised in the countries at the bottom of the development pyramid, where there might be several factors at play, increasing the complexity of the analysis.

On the other hand, we were able to witness a concerning lack of credibility and availability of data. In between forums, meetings and symposiums, there are a series of monitoring and control policies that, for the type of credibility and importance associated to the promulgators of such rules, should have an enforcement level far more significant than they actually do. The majority of countries that compose development co-operation directorate (DAC) are considered the most developed, democratic and social aware nations in the world. If the most responsible ones are not able to comply with the defined standards, what may we expect from the remaining ones?

The Human Development Report (2005) states: "International aid is one of the most powerful weapons in the war against poverty. Today that weapon is underused and badly target. There is too little aid and too much of what is provided is weakly linked to human development". Based on our findings, they couldn't be more right regarding their final argument on the weak link between aid an human development, at least for the ten lowest HDI countries.

The disaggregation of the study, following a sectorial analysis was far more conclusive, and more objective in answering our research question. We developed and tested a measurement for the real impact of Sectorial ODA and the three main axes of human/economic development. The results were clear, despite some relevant limitations, showing very limited explanatory power of ODA in each one of the main branches of human welfare.

The overall analysis has also enlightened some other collateral points: Strategy is definitely a weak point on aid. The need to allocate needs according to resources, donors according expectations, and amounts according to potential, is being neglected.

From a simple analysis on flows according to sector, is notorious the lack of continuity which consequently brings unstructured and volatile programmes based upon unpredictable budgets.

Although we found a general low explanation power of sectorial aid in overall development, there was one specific sector that stood out. Overall Health sector may represent some potential fruitful possibility for this specific set of countries. Far from being a pattern or general evidence applicable to every recipient country, the impact of health-aid on health was the most significant of the three studied development fields. Is this finding, relevant enough to give an indication of pursuing health sector as effective type of aid? Williamson (2008) states that overall health aid does not have a measurable, positive effect on human development and therefore there isn't any evidence to face health sector as a policy objective of promoting human welfare.

Therefore, in our view, far more research is needed to develop a strong most effective type of aid base, on which policy and strategic guidelines can be made.

5.1 Future Research

There's a long path ahead regarding aid's productivity and control. Our findings suggest a significant role of strategic deployment that should be pursued as a crucial role for future aid disbursements.

The disaggregation of the data, proved to improve our results, which might define a new path for further research. It could be rewarding to study other possible set of relations, with a narrow focus, which mainly depends on the need to have more specific and higher quality data. This will certainly allow having a "cloudless" comprehension in which could be the most effective and productive type of aid, and which are the sectors better prepared to maximize aid benefits.

The international agenda is committed to monitoring and establishing medium-term goals for the global aid effort, nonetheless it is also very important to understand how aid could have a more relevant impact on recipient countries' economy. It also may be worthwhile to investigate the connection between institutions, economic development, and human development and the channels through which each operates.

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6.2 Netgraphy

- http://data.worldbank.org/
- http://info.worldbank.org/governance/wgi/
- http://www.systemicpeace.org/
- http://stats.oecd.org/
- http://data.un.org/
- http://hdr.undp.org/en/data/trends/
- http://www.aidflows.org/
- http://www.devinfo.org/
- http://www.publishwhatyoufund.org/
- http://www.aiddata.org/
- http://www.aiddata.org/
- http://www.systemicpeace.org/
- http://www.prsgroup.com/
- http://www.developmentdata.org/

7 APPENDICES

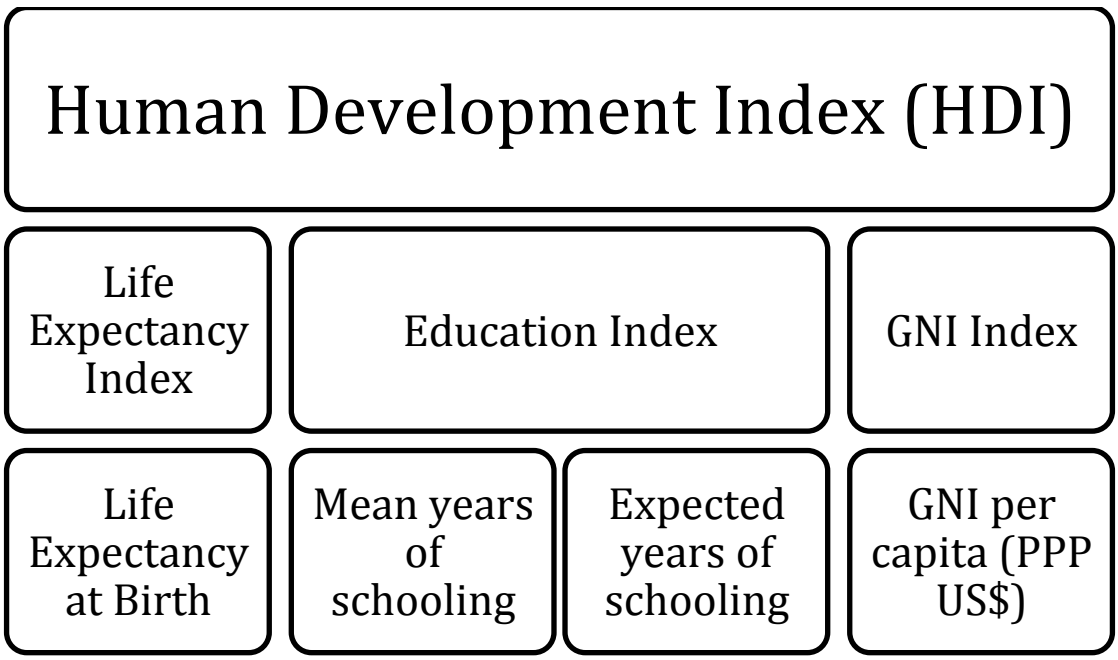
7.1 Appendix A: Indicators Description

Table 12 - List of "Development Aid data" providers

Description	Website
International Development Statistics – OECD	http://www.oecd.org/
Aid Data 2.0	http://www.aiddata.org/
Credit Reporting System's (CRS) database on aid activities	http://www.oecd.org/
International Country Risk Guide	http://www.prsgroup.com/
Polity IV	http://www.systemicpeace.org/polity/polity4.htm
International Aid Transparency Initiative	http://www.aidtransparency.net/
Publish what you fund	**http://www.publishwhatyoufund.org/**

Source: Author

Figure 2 - Components of Human Development Index



Source: http://hdr.undp.org/en/statistics/hdi/

7.2 Appendix B: Human and Economic Development Indicators

7.2.1 GDP

The **Gross domestic product** (**GDP**) is an economic measure that refers to the market value of the total production of final goods and services, of a specific country at a given period. It considers all the companies producing in a specific country, independently of their ownership (GDP is based on product produced within a country's borders).

GDP may be calculated based on three approaches: product, income and expenditure.

Product Approach:

The most direct is the product approach that sums up all the output form across the variety of enterprise classes: Firstly, by estimating the gross value of the domestic output across all economic activities (by multiplying each sector's output by its corresponding market price and adding them together; adding the gross sales and inventories provided by companies' records); Secondly by assessing the intermediate consumption (costs of material and services used to produce final goods and services). Finally, GDP is determined by subtracting the items above in order to find the net value of the domestic product

Expenditure Approach:

$Y = C + I + E + G$

Where:

Y = GDP

C = Consumer Spending

I = Investment made by industry

E = Excess of Exports ove Imports

G = Government Spending

Income Approach:

Income Approach is basically the sum of the total income from all productive factors:

$GDP = R + I + P + SA + W$

R: rents
I: Interests
P: Profits
W: Wages
SA: Statistical Adjustments

Because GDP is a widely available indicator, measured frequently and consistently (and therefore with the possibility of easily find and understand trends), it became a good proxy regarding standard of living, based on the premises that all citizens would have real advantages from the rise of their country's production output. Although there are important limitations, which need to be addressed: For example GDP ignores part of the production regarding informal economy)

In order to responsibly compare the GDP across the existent variety of countries, it is needed to convert its value (presented in the local currency) to a common, international valid currency, through the Purchasing Power Exchange Rate:

7.2.1.1 PPP

Purchasing Power Parity (PPP) is basically an alignment between countries, where a sum of money has the exactly same purchasing power, i.e., it buys the same "basket of goods" in each country, and therefore accounts for the relative effective domestic purchasing power of the average consumer/producer of one specific economy.
In practical terms, it would be the same as selling an entire "basket of goods" in one country convert the earned cash at the currency market rate and then rebuy that same basket of goods in other country.

Because is based on the Law of one price, it considers that identical goods will be priced equally in different markets, when prices are expressed on an identical currency (with both transactions costs and official trade barriers being nonexistent).
So, the real exchange rate becomes equal to the nominal exchange rate corrected with the differences in purchasing power of each specific country. Therefore, if both countries have the same purchasing power parity, the real exchange rate would be equal to one
The calculation of such condition is difficult once is quite complicated to find the exactly same basket of goods, in order to compare the purchasing power across countries.
As a general rule, the more similar the prices structure between countries, the more valid the PPP comparison. Consequently, PPP exchange rates are particularly useful when governments artificially manipulate official exchange rates, once became the most realistic basis for economic comparison.

Once this specific method compensates for the limitations in term of value of the local currencies in the international markets, it is able to provide a credible indicator for living standard.

7.2.2 The Human Development Approach

"Human development, as an approach, is concerned with what I take to be the basic development idea: namely, advancing the richness of human life, rather than the richness of the economy in which human beings live, which is only a part of it."

During the 1980s, there was a rising concern regarding the link between economic growth and the consideration of individual human choices. The creation of the human developing concept and significance was then defined based on the awareness on the lack of consideration of several factors such as social "diseases" despite economic growth and the human costs of adjustment programs.

This set of topics, crucial to human development, let to framing a complex indicator that is based both on human perspectives (Participation and freedom, long-term Sustainability, Human security and well being, Social progress) and on economic growth (Economic progress, Efficiency, Equity)

7.2.2.1 Human Development Index (HDI)

In order to address the rising concerns on centering policies on human development, PNUD developed the first human development report. This report included a series of new indicators of life expectancy, educational attainment and income into a composite human development index, the HDI. This new index was able to aggregate both social and economic development.

The HDI was created under the premises that people and their competences should be the ultimate criteria in assessing a country's developing potential.

Currently, the HDI index sets a minimum and a maximum for each indicator[31]. Then it show the relation that each country have with each indicator, expressed in values between 0 and 1.

[31] The education component of the HDI is now measured by mean of years of schooling for adults aged 25 years and expected years of schooling for children of school entering age. The decent standard of living component is measured by GNI per capita (PPP$) instead of GDP per capita (PPP$). The life expectancy at birth component of the HDI is calculate using a minimum value of 20 years and a maximum value of 83.4 years

7.2.2.2 HDI's Limitations

Although HDI is the most complex and complete index regarding development nowadays, it ignores some regional specific contexts. Because it analyses countries on a broad view, it ignores different groups (ethnic, social) within the country with different development levels[32]. Also the fact that it considers two slow-moving indicators such as life expectancy and mean years of schooling makes the monitoring of changes much harder.

To overcome such analysis's gaps, the human development index has been improved through disaggregation of data; therefore the problem of a country's overall index embodying different groups with different development levels may be partially solved with the addition of "more sensitive to short-term changes" components to the national HDI.

This desegregation approach is far more suitable to help to guide policy and sustain objective action in order to understand and solve gaps and inequalities.

7.2.2.3 HDI's requirements

Due to its cross-data nature, using highly variable and complex aggregation indexes, HDI requires some information homogenization:

It analyses 187 countries with different price levels. In order to compare data across different countries, the data must first be converted into a common currency: The Purchase Power Parity (PPP) (Section 7.2.1.1)

Finally, and due to its comparative nature, HDI is calculated based on a geometric mean, which considers differences across dimensions. The geometric mean reduces the level of substitutability between dimensions, giving them the right importance according to its intrinsic characteristics.

7.3 Appendix C: List of Variables and Sources

PGDP/G

Aid directed to Production Sectors of the recipient countries, as a part of the country's Gross Domestic Product, in constant prices crossed with annual GDP Growth per capita,

[32] Among the results, it was found that the richest 20% of the population in Bolivia had an HDI rank 97 positions higher than the poorest 20%. Likewise, in South Africa the top quintile ranks 101 positions above the lowest

in constant prices. Production Sectorial Aid from OECD stats, 2011. GDP and Annual GDP Per Capita growth taken from World Bank, 2011.

EGDP/SE

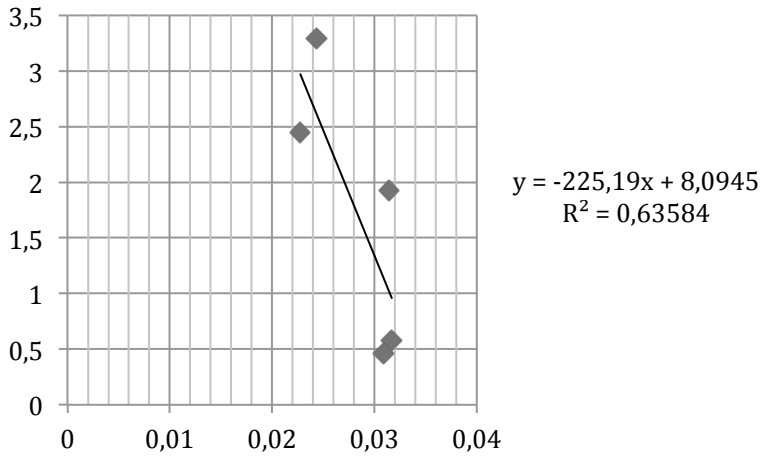
Aid directed to Education Sectors of the recipient countries, as a part of the country's Gross Domestic Product, in constant prices crossed with Primary School Enrolment. Education Sectorial Aid from OECD stats, 2011. GDP and School Enrolment taken from World Bank, 2011.

HGDP/MO

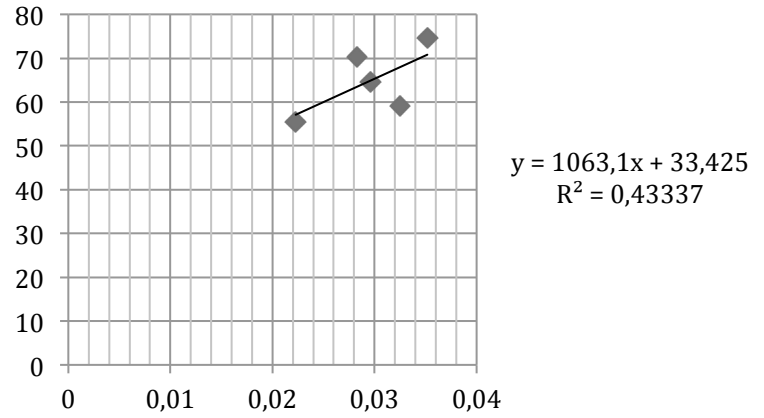
Aid directed to Health Sectors of the recipient countries, as a part of the country's Gross Domestic Product, in constant prices crossed with infant Mortality rate (per 1,000 live births). Health Sectorial Aid from OECD stats, 2011. GDP and infant Mortality rate (per 1,000 live births) taken from World Bank, 2011.

7.4 Appendix D: Scatter Plots with coefficient of determinations

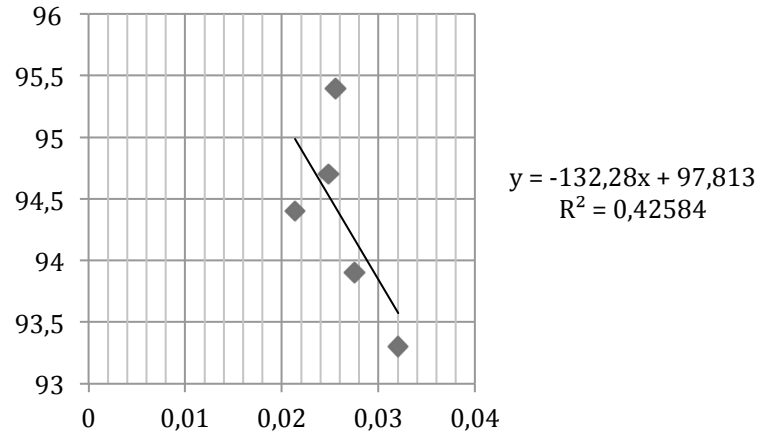
Burkina Faso Scattered Plot – PGDP/G



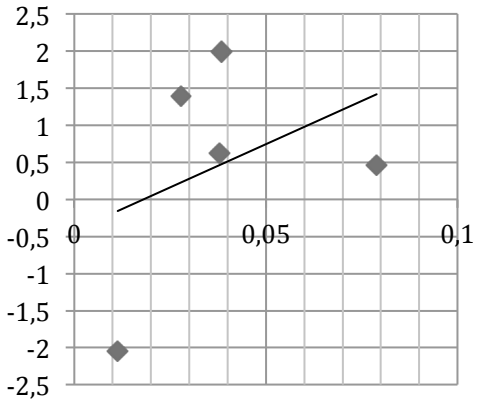
Burkina Faso Scattered Plot – EGDP/SE



Burkina Faso Scattered Plot – HGDP/MO

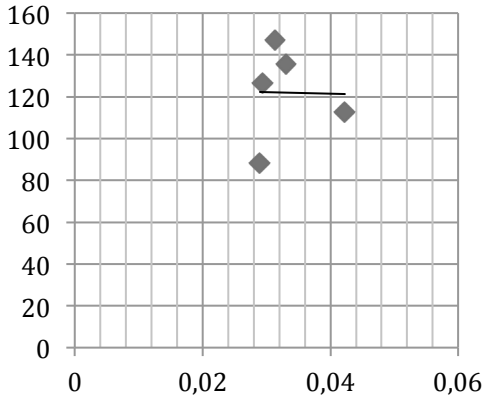


Burundi Scattered Plot – PGDP/G



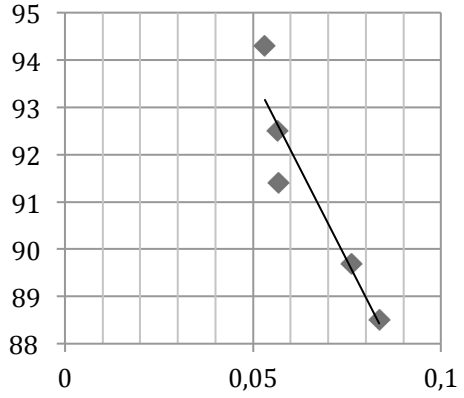
$y = 23{,}3x - 0{,}4205$
$R^2 = 0{,}14143$

Burundi Scattered Plot – EGDP/SE



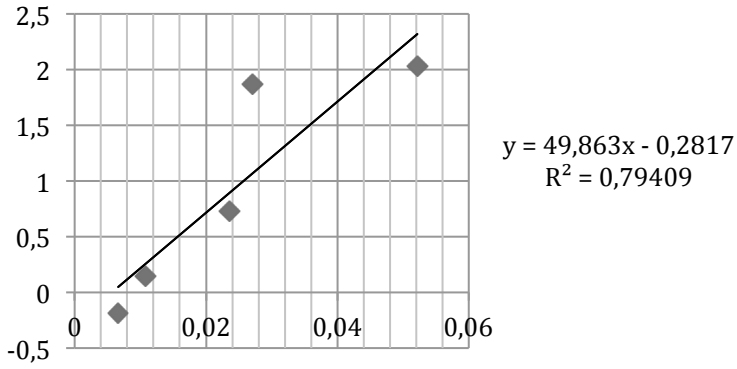
$y = -73{,}545x + 124{,}44$
$R^2 = 0{,}00031$

Burundi Scattered Plot – HGDP/MO

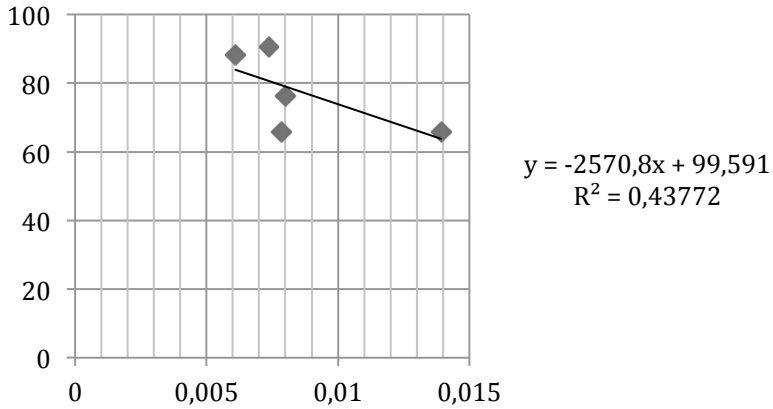


$y = -155{,}66x + 101{,}43$
$R^2 = 0{,}86666$

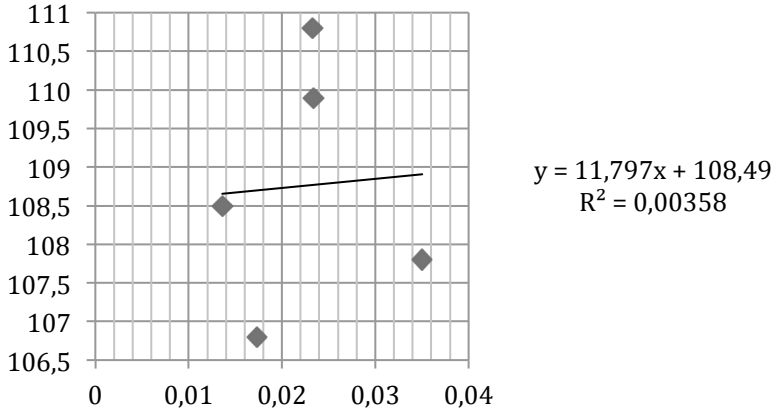
Central African Republic Scattered Plot – PGDP/G



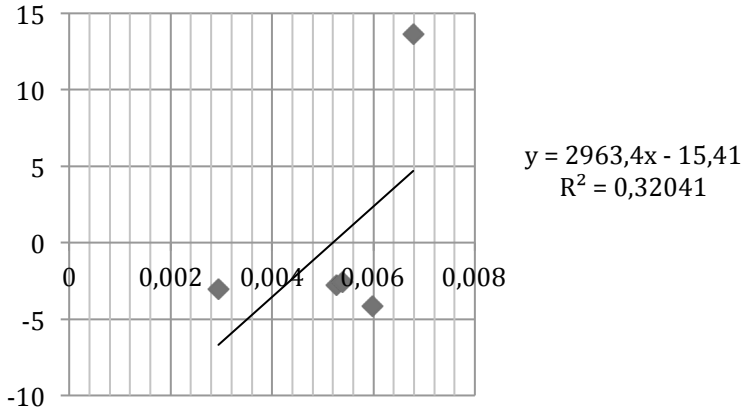
Central African Republic Scattered Plot – EGDP/SE



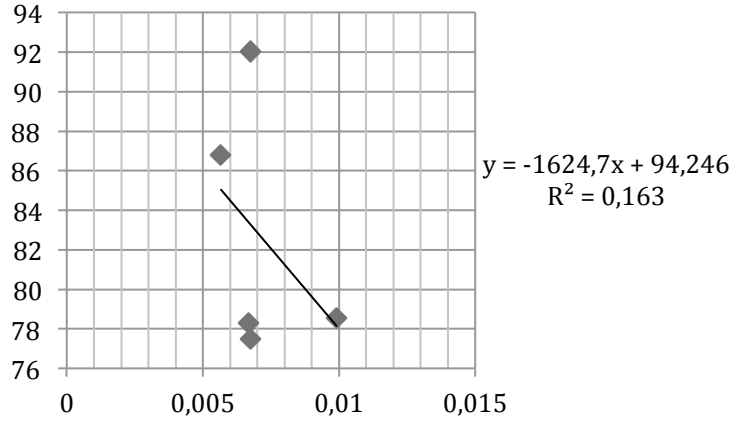
Central African Republic Scattered Plot – HGDP/MO



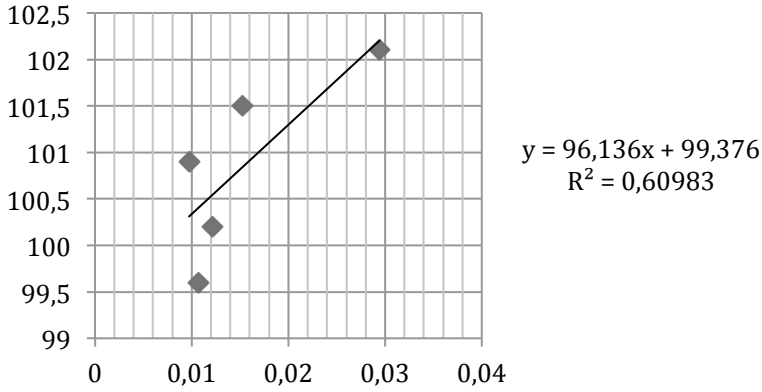
Chad Scattered Plot – PGDP/G



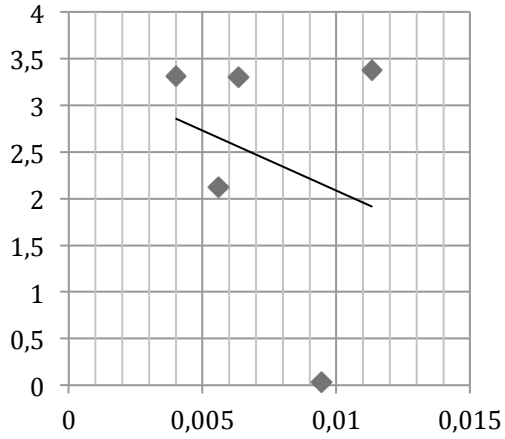
Chad Scattered Plot – EGDP/SE



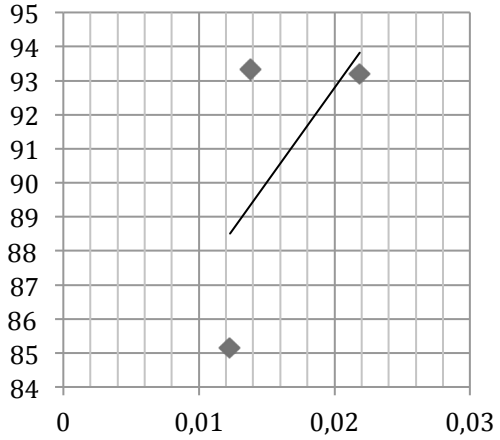
Chad Scattered Plot – HGDP/MO



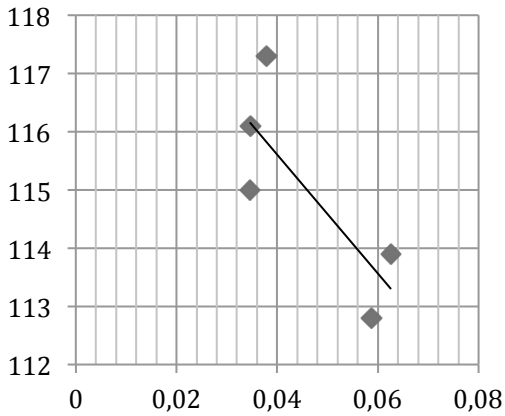
Democratic Republic of Congo Scattered Plot – PGDP/G



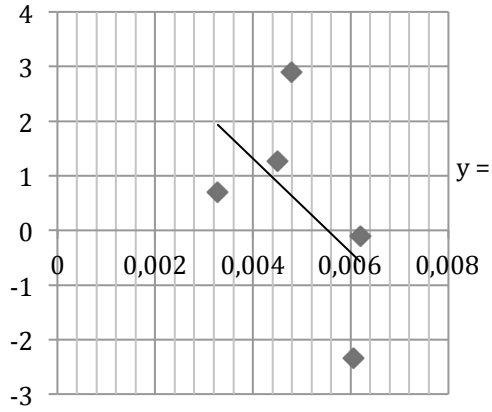
Democratic Republic of Congo Scattered Plot – EGDP/SE



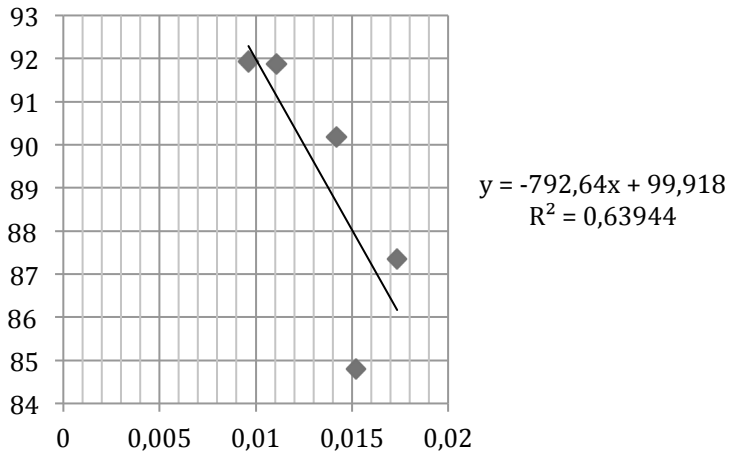
Democratic Republic of Congo Scattered Plot – HGDP/MO



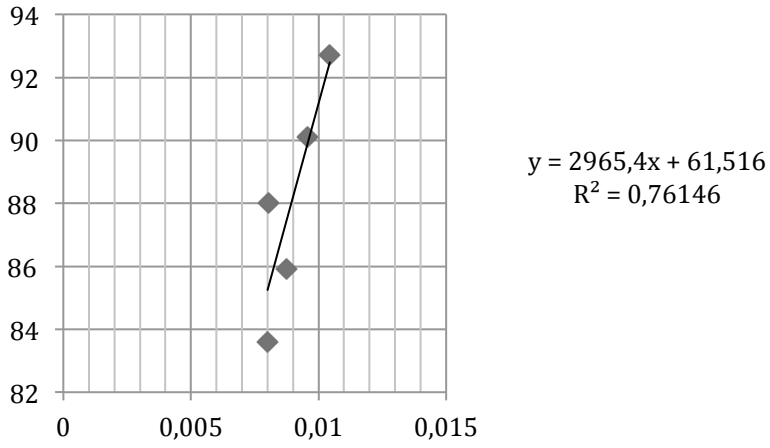
Guinea Scattered Plot – PGDP/G



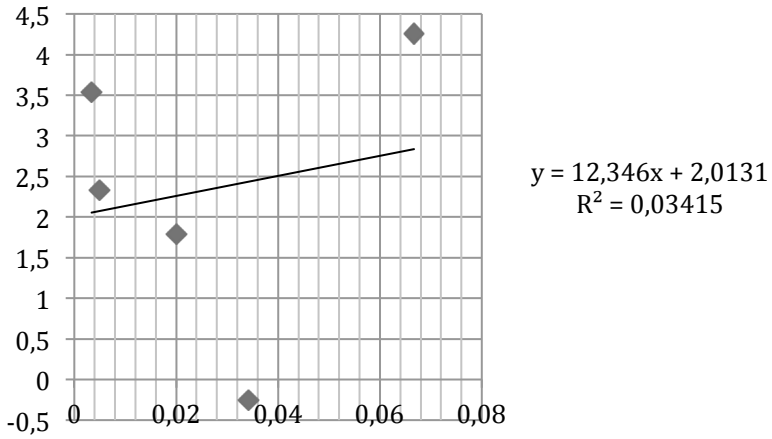
Guinea Scattered Plot – EGDP/SE



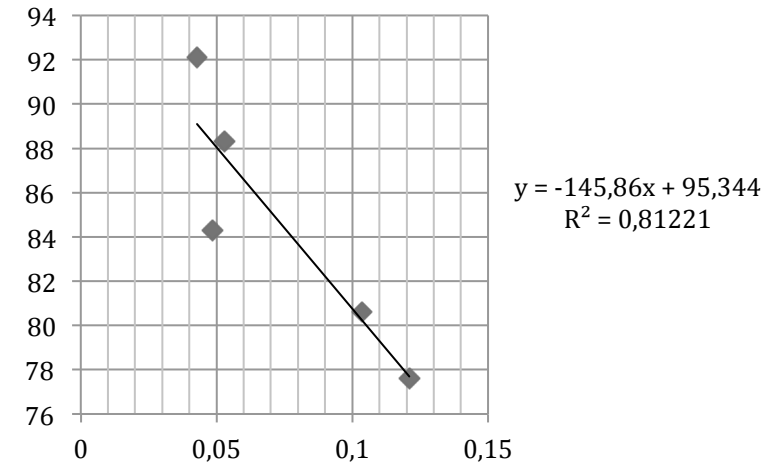
Guinea Scattered Plot – HGDP/MO



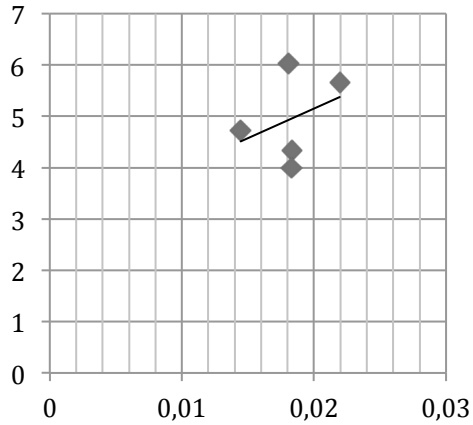
Liberia Scattered Plot – PGDP/G



Liberia Scattered Plot – HGDP/MO

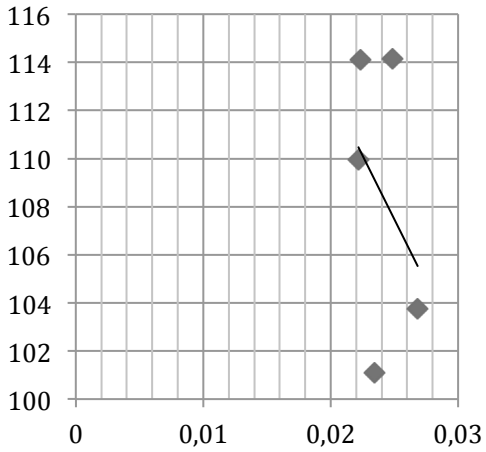


Mozambique Scattered Plot – PGDP/G



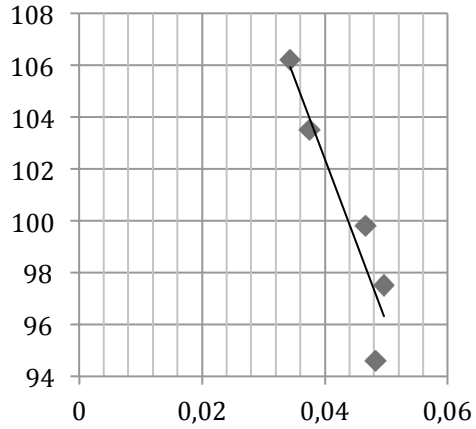
$y = 115{,}32x + 2{,}8452$
$R^2 = 0{,}12549$

Mozambique Scattered Plot – EGDP/SE



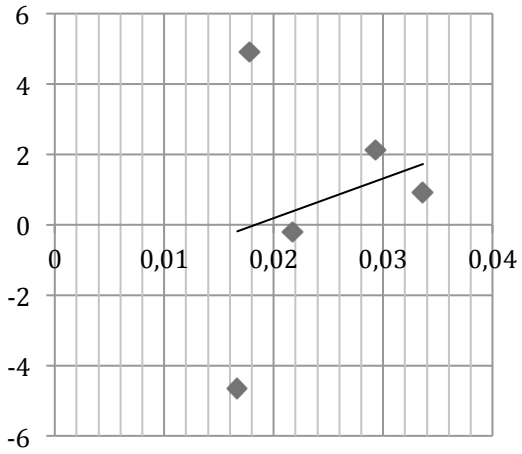
$y = -1062{,}7x + 134{,}04$
$R^2 = 0{,}1208$

Mozambique Scattered Plot – HGDP/MO

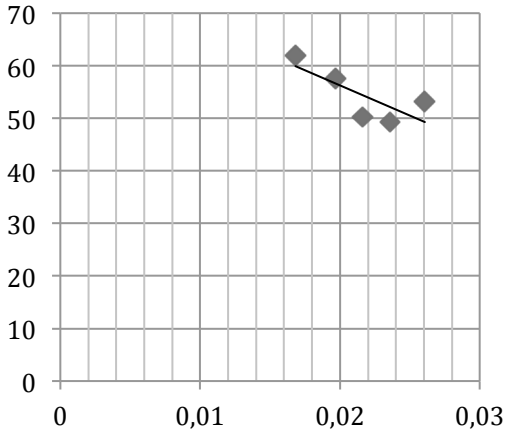


$y = -630{,}25x + 127{,}59$
$R^2 = 0{,}8744$

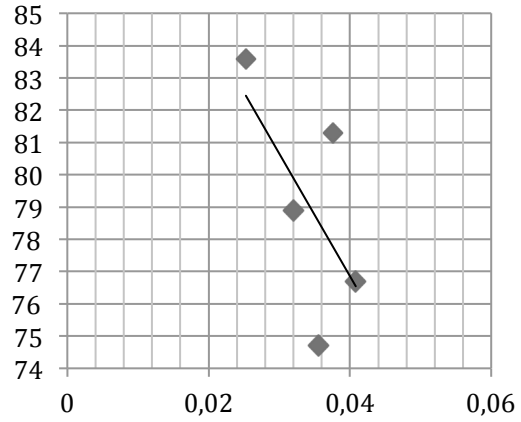
Niger Scattered Plot – PGDP/G



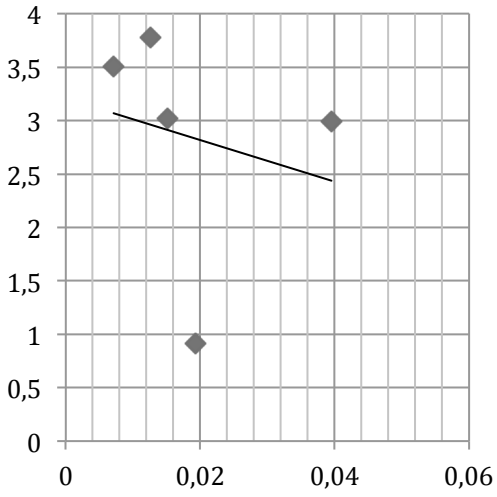
Niger Scattered Plot – PGDP/G



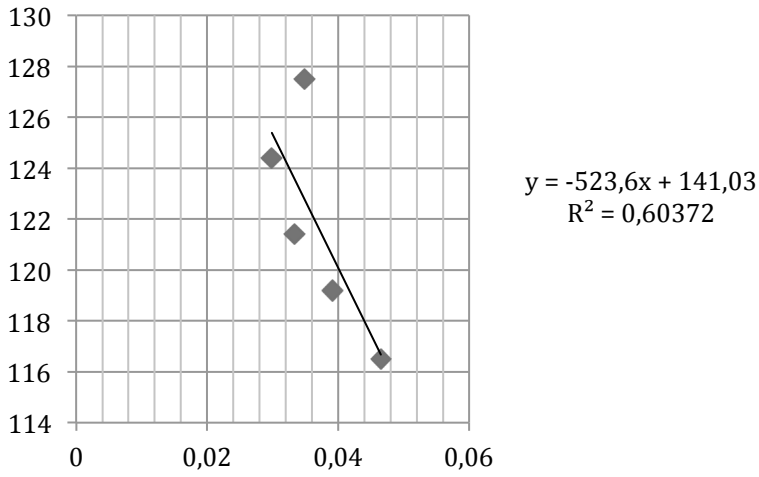
Niger Scattered Plot – PGDP/G



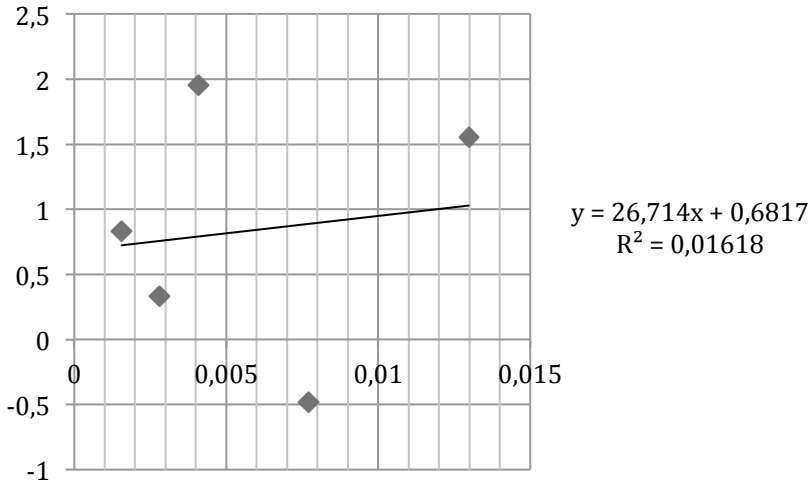
Sierra Leone Scattered Plot – PGDP/G



Sierra Leone Scattered Plot – HGDP/MO



Haiti Scattered Plot – PGDP/G



Haiti Scattered Plot – HGDP/MO